IRPL-F16

IONOSPHERIC DATA

ISSUED

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PREPARED BY INTERSERVICE RADIO PROPAGATION LABORATORY
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IRPL-F16 INTERSERVICE RADIO PROPAGATION LABORATORY
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TERMINOLOGY AND SCALING PRACTICES

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the Section on "Terminology", in reports IRPL-F1, 2, 3, 4, 5.

Beginning with data reported for September, a new symbol, L, defined as follows, is adopted for use in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

> L or l = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples. (See "Report of International Radio Propagation Conference," IRPL-C61, June 1944, VI 3c, p.37).

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values, for each hour of the day, for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 Jan. 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the IRPL, for the Canadian stations, and for all others sending in detailed tabulations to the IRPL, from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data existed.

The monthly median values used here are the values equalled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given, because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:

Values missing because of A, B, C or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:

Values missing because of E are counted as equal to or less than the lower limit of the recorder.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For $f^{o}F2$, as equal to or less than $f^{o}F1$.
2. For $h'F2$, as equal to or greater than the median.

Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the lower limit of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all, are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by a parenthesis, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, no median value is computed, the data being considered insufficient.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful.

The E and F1 layers are so regular in their characteristics that, so long as there are at least five values, the median is not considered as doubtful.

3. If more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

It is expected that this practice will be of assistance in evaluating the monthly median Washington data.

MONTHLY AVERAGE AND MEDIAN VALUES OF IONOSPHERIC DATA

The ionospheric data given here in graphical and tabular form were assembled by the Interservice Radio Propagation Laboratory for analysis and correlation, incidental to IRPL predictions of radio propagation conditions. The following are the sources of the data;

Australian Council for Scientific and Industrial Research, Radio Research Board, Australia;
- Brisbane, Australia
- Canberra, Australia
- Cape York, Australia

British National Physical Laboratory, and Inter-Services Ionosphere Bureau;
- Slough, England
- Great Baddow, England
- Burghead, Scotland
- Delhi, India
- Capetown, Union of S. Africa
- Colombo, Ceylon

Canadian Radio Wave Propagation Committee;
- Churchill, Canada
- Ottawa, Canada
- St. John's, Newfoundland
- Prince Rupert, Canada
- Clyde, Baffin I.

New Zealand Radio Research Committee;
- Kermadec Is.
- Christchurch (Canterbury University College Observatory)
- Campbell I.
- Pitcairn I.
- Rarotonga I.

Interdepartment Ionosphere Bureau, U.S.S.R. Scientific Experimental Institute of Terrestrial Magnetism, Moscow, U.S.S.R.;
- Bukhta Tikhaya, U.S.S.R.
- Tomsk, U.S.S.R.
- Sverdlovsk, U.S.S.R.
- Moscow, U.S.S.R.
- Leningrad, U.S.S.R.
- Alma Ata, U.S.S.R.

Carnegie Institution of Washington (Department of Terrestrial Magnetism);
- Christmas I.
- Fairbanks, Alaska (University of Alaska, College, Alaska)
- Maui, Hawaii
- Trinidad, Brit. West Indies
- Huancayo, Peru
- Watheroo, W. Australia

United States Army Signal Corps:
Leyte, Philippine Is.

National Bureau of Standards:
Washington, D.C.

Stanford University:
San Francisco, California

Louisiana State University:
Baton Rouge, Louisiana

University of Puerto Rico:
San Juan, P.R.

Harvard University:
Boston, Massachusetts

The tables of "provisional data" give values as reported to the IRPL by telephone or telegraph. Any errors in these values will be corrected in later issues of the F-series reports. In final data tabulations, any omission of values previously given in provisional tabulations is indicated by a dash.

The tables and graphs of "final data" are correct for the values reported to the IRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

a. Differences in scaling records where spread echoes are present.

b. Omission of values where $f^{o}F2$ is less than or equal to $f^{o}F1$, leading to erroneously high values of monthly average or median values.

c. Omission of values where critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series reports, IRPL-F1, 2, 3, 4, and 5. Discrepancies between predicted and observed values are often ascribable to these effects.

IONOSPHERIC DATA FOR EVERY DAY AND HOUR

These data, observed at Washington, D.C., follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given under "Terminology and Scaling Practices" above.

IONOSPHERE DISTURBANCES

Table 65 presents ionosphere character figures for Washington, D.C., during November 1945, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess", together with American magnetic K-figures which are usually covariant with them.

Table 66 gives provisional radio propagation quality figures for North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, October 1945, compared with the IRPL daily radio disturbance warnings, and ISIB daily warnings, the IRPL semiweekly radio propagation forecasts for the A-zone, and the half-day American geomagnetic K-figures.

The radio propagation quality figures were prepared from radio traffic data, reported to IRPL, in the manner described in detail in report IRPL-R13, "Ionospheric and Radio Propagation Disturbances, October 1943 through February 1945," issued 24 May 1945.

SEASONAL VARIATIONS IN F2-LAYER CRITICAL FREQUENCIES

The complexity of variations in F2-layer critical frequencies, which are manifest with changes in solar activity, geographical location, season, and time of day (Cf. IRPL-R4, "Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies") is such that their analysis is best effected by the separate consideration of each of these types of covariance. In the previous issue of this report, IRPL-F15, a preliminary survey was presented of geographical-diurnal variations of yearly-average $f^{o}F2$ at a constant value of solar activity. World-wide distribution of purely seasonal variations, expressed by ratios of monthly-average $f^{o}F2$ to the corresponding yearly-average values, is presented herewith for the months of June, September, and December, as a survey of conditions typical of summer solstice, equinox, and winter solstice.

The ratio of monthly-average to yearly-average $f^{o}F2$ for any hour, at any given location, is nearly constant, although there sometimes appears a slight variation in this ratio with solar activity. (IRPL-R4, "Methods Used

by IRPL for the Prediction of Ionospheric Characteristics and Maximum Usable Frequencies"; IRPL-R11, "A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.") In the present report this slight change with solar activity is not considered, the ratios of monthly-average to yearly-average $f^{o}F2$ given being the mean values of these ratios for all available data.

Figs. 47 through 52 present variations of the ratios of monthly-average to yearly-average $f^{o}F2$, at noon and midnight, for the months of June, September, and December. The reliability of the points plotted on these curves is considerably less than that of the yearly-average values, plotted in similar fashion, which were presented in the previous issue of this report, IRPL-F15, since these represent averages of one-twelfth as many measurements, and, in some cases, solar activity variations in the ratio are apparent.

As in the case of the yearly-average values of $f^{o}F2$, there is pronounced variation with longitude, as shown by the difference in variation between the series of values for ionosphere stations in the W, I, and E zones of the IRPL-D series prediction charts. There is likewise a difference between northern and southern hemisphere values, apart from that due to change in solar declination, as is shown by the discrepancy between the series of values for the given month in any zone, and the values plotted at reverse latitude for opposite season, (the month six months later or earlier).

Because of constant sunlight on the north pole during June, and on the south pole during December, values of the ratio of monthly-average to yearly-average $f^{o}F2$ are higher than unity in these cases, and less than unity during opposite seasons. Midnight values are particularly high in the southern hemisphere during December, and in the northern hemisphere during June, with equinox values approximating unity in both hemispheres. In September, the average solar declination is 3^{o} north of the equator, and therefore northern-hemisphere values of the ratio are slightly greater than unity, southern-hemisphere values slightly less than unity. In all cases, there appear slightly increased values of the ratio near the subsolar point. These variations in midnight values of the ratio are principally because of the great delay in ionic recombination at F2-layer heights, probably caused by solar heating of the atmosphere.

Midday variations in the ratio are far more complex, since they entail both this change in recombination rate, and the appearance of F1-layer ionization, the former tending to increase the ratio with increasing amount of sunlight, the latter tending to decrease it. In general, less departure from yearly-average values of $f^{o}F2$ is shown for midday. The values of the ratio more nearly approximate unity during all seasons, being generally low during June and high during December.

Figs. 54 through 61 present world-wide variations of the ratio of monthly-average to yearly-average $f^{o}F2$ for W, I and E zones, during June, September, and December, in the form of contour charts on a latitude versus local-time grid, where the contour lines represent values of the ratio.

These charts were prepared by drawing, for each hour, latitude-variation curves of the type shown in Figs. 47 through 52, plotting these values as contour points, and smoothing to obtain general consistency among them, then multiplying the smoothed values by smoothed yearly-average values for a constant sunspot number obtained in similar fashion from curves of the type shown in Figs. 83 through 88 of IRPL-F15, thus reproducing typical diurnal curves for each 10° of latitude, correcting these curves where necessary (very little correction being needed, in general) to agree with actual data, as a check on smoothing estimation, and finally replotting the corrected values.

The relatively low gradients shown by the contour lines for September indicate, as might be expected, that values of $f^{o}F2$ during the equinox season approximate yearly-average values. The generally high equatorial values during night hours may be due to the terrestrial temperature lag behind seasonal variations of solar radiation.

The contour lines for the solstice months of June and December show that the most important variation of the ratio of monthly-average to yearly-average $f^{o}F2$ is associated with the seasonal change of sunrise and sunset times at ionosphere heights. It is of interest that the contours of this ratio for these seasons are roughly similar to the contours of $f^{o}F2$ for the opposite season, as may be seen by comparison of these charts with corresponding prediction charts of $f^{o}F2$, issued in reports of the IRPL-D series.

Reasons for certain seasonal variations, shown by these contour charts, are not readily apparent. It is possible that some of these are not significant, inasmuch as there are as yet insufficient data for making precise estimates of seasonal variation for certain regions. Further acquisition of ionospheric data should, however, establish their significance, and further study of these seasonal variations, especially where significant departures from regular variation with solar declination are manifest, should afford information concerning upper-atmospheric circulation and possibly concerning the effects of solar-corpuscular ionization.

ERRATA

1. In F11 (issued July 1945), Table 29, Baton Rouge, Louisiana, May 1945, $f^{o}F2$ at 1700 should have been 7.6 instead of 9.6.

2. In F13 (issued September 1945), Table 39, Slough, England, June 1945, $f^{o}F2$ at 0300 should have been 4.7 instead of 4.6.

Table 1 (Provisional Data)

Fairbanks, Alaska (64.9°N, 147.8°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	1.6					3.2	2.9
01	320	1.4					3.8	2.3
02	340	1.4					3.2	2.7
03	340	1.4					3.3	2.7
04	330	1.2					3.5	2.8
05	310	1.3				0.9	3.2	2.8
06	300	1.5					3.1	2.9
07	270	2.3				1.2	3.1	2.9
08	250	3.8				1.5	3.0	3.1
09	240	5.4				1.7	3.0	3.2
10	230	7.0				1.9	3.0	3.2
11	230	7.7				2.0	3.0	3.2
12	230	8.4				2.0	3.0	3.2
13	220	8.0				1.9	3.0	3.2
14	220	8.0				1.6	3.0	3.3
15	220	6.5				1.3	3.0	3.3
16	220	5.3				1.3	3.0	3.2
17	240	4.1				1.1	3.0	3.2
18	230	2.9				1.3	2.9	3.3
19	250	2.3					3.0	3.2
20	260	2.2					3.1	3.2
21	270	1.9					3.2	3.1
22	260	1.9					3.2	3.1
23	290	1.8					3.2	3.1

Time: 150.0°W.
Length of time sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.
Median values.

Table 2 (Provisional Data)

Prince Rupert, Canada (54.3°N, 130.3°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.0						3.3
01		2.0						3.2
02		2.1						3.0
03		2.0						3.1
04		2.1						3.0
05		2.2						3.0
06		2.4						3.1
07		2.7						3.1
08		4.0						3.3
09		5.8						3.6
10		7.3						3.6
11		8.7						3.6
12		9.0						3.6
13		9.0						3.6
14		9.1						3.6
15		8.7						3.6
16		8.0						3.7
17		6.4						3.6
18		5.2						3.6
19		3.9						3.6
20		2.9						3.6
21		2.5						3.5
22		2.4						3.4
23		2.1						3.5

Time: 120.0°W.
Length of time sweep: Manual operation.
Median values.

Table 3 (Provisional Data)

Boston, Massachusetts (42.4°N, 71.2°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.3						2.9
01		3.4						2.8
02		3.4						2.8
03		3.5						2.9
04		3.3						2.9
05		3.3						3.0
06		3.2						3.0
07		5.6						3.2
08		7.4						3.4
09		8.1						3.3
10		8.7						3.2
11		9.1						3.2
12		9.7						3.2
13		9.2						3.2
14		9.3						3.1
15		9.3						3.2
16		9.0						3.2
17		7.5						3.1
18		6.4						3.0
19		5.2						3.0
20		4.4						2.9
21		3.6						2.8
22		3.6						2.8
23		3.4						2.8

Time: 75.0°W.
Length of time sweep:
Median values

Table 4 (Provisional Data)

San Francisco, California (37.4°N, 122.2°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.2						2.8
01		3.3						2.9
02		3.4						2.8
03		3.4						2.9
04		3.4						2.9
05		3.4						2.8
06		3.4						2.9
07		5.6						3.2
08		8.0						3.3
09		8.4						3.3
10		9.0						3.2
11		9.1						3.1
12		9.3						3.1
13		9.4						3.0
14		9.4						3.1
15		9.0						3.2
16		8.2						3.2
17		6.6						3.3
18		4.4						3.1
19		3.6						3.2
20		3.0						3.1
21		2.7						3.0
22		2.9						2.8
23		3.1						2.8

Time: 120.0°W.
Length of time sweep: 0.8 Mc to 12 Mc in six minutes. Record centered on the hour.
Median values.

Table 5 (Provisional Data)

Baton Rouge, Louisiana (30.5°N, 91.2°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.5						3.0
01		3.5						3.0
02		3.6						3.0
03		3.9						3.0
04		3.7						3.1
05		3.4						3.1
06		3.8						3.1
07		6.4						3.4
08		8.0						3.3
09		9.2						3.2
10		9.6						3.3
11		9.6						3.3
12		9.4						3.1
13		9.7						3.2
14		9.7						3.2
15		9.5						3.2
16		8.6						3.3
17		7.4						3.3
18		5.0						3.3
19		4.3						3.2
20		3.6						3.2
21		3.4						3.1
22		3.5						3.1
23		3.5						3.0

Time: 90.0°W.
Length of time sweep: 1.9 Mc to 9.8 Mc in three minutes, thirty seconds.
Median values.

Table 6 (Provisional Data)

Maui, Hawaii (20.8°N, 156.5°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	240	4.2						3.2
01	230	3.6						3.2
02	250	2.8						3.2
03	250	2.8						3.2
04	200	2.2						3.2
05	200	2.1						2.7
06	300	2.4						2.8
07	250	5.7						3.2
08	240	8.2				2.6		3.2
09	280	10.2	230	4.6		3.1		3.1
10	280	12.0	220	4.8		3.3		3.1
11	280	12.9	210	5.0		3.4		3.0
12	290	13.7	200	5.0		3.5		3.0
13	280	14.3	210	5.0		3.4		3.0
14	270	14.1	220	4.8		3.3		3.0
15	260	14.2	220	4.6		3.0		3.1
16	270	13.0	230	4.0		1.1	3.9	3.2
17	230	10.8					3.6	3.3
18	220	8.3					3.6	3.4
19	210	5.6					3.4	3.2
20	220	5.0						2.9
21	250	5.7						3.0
22	240	5.7						3.2
23	240	4.6						3.2

Time: 150.0°W.
Length of time sweep: 2.0 Mc to 16.0 Mc in one minute.
Median values.

Table 7 (Provisional Data)

Trinidad, Brit. West Indies (10.6°N, 61.2°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	4.6						3.2
01	240	4.5						3.2
02	240	4.0						3.2
03	230	3.2					2.6	3.3
04	280	2.8					2.4	2.8
05	280	3.0					2.6	2.9
06	250	5.0					2.3	3.2
07	240	7.0				2.2	2.8	3.4
08	240	8.1	240	4.4		2.9	3.4	3.3
09	280	9.6	230	4.8		3.3	3.8	3.2
10	280	10.3	230	4.9		3.5	4.1	3.2
11	280	10.8	220	5.0		3.6	4.2	3.1
12	280	10.6	220	5.0		3.7	4.3	3.2
13	280	9.8	220	4.9		3.5	4.4	3.1
14	280	9.8	230	4.9		3.4	4.4	3.1
15	280	9.4	230	4.5		3.1	4.4	3.1
16	250	9.6	230	4.2		2.7	3.9	3.2
17	240	8.8	240	3.2		2.2	3.5	3.3
18	220	7.4					3.0	3.2
19	230	6.4					2.8	3.1
20	240	5.2					2.9	3.1
21	270	4.8					2.5	2.8
22	270	4.8						2.9
23	260	4.9					2.6	3.0

Time: 60.0°W.
Length of time sweep: 2.0 Mc to 16.0 Mc in one minute.
Median values.

Table 8 (Provisional Data)

Christmas I. (1.9°N, 157.3°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	220	8.0					3.5	3.1
01	240	6.6					3.4	3.2
02	250	5.4					3.1	3.3
03	250	5.0					2.6	3.2
04	250	4.7					2.4	3.2
05	240	4.4					2.7	3.2
06	250	4.5					2.7	3.1
07	240	7.0				2.2	3.6	3.1
08	230	9.0				3.0	6.8	2.8
09	280	9.7	220	4.6		3.3	7.2	2.5
10	300	9.2	210	5.0		3.7	7.4	2.5
11	320	9.1	200	5.1		3.8	9.7	2.5
12	320	9.3	200	5.1			9.4	2.5
13	310	9.3	210	5.0		3.7	8.5	2.6
14	300	10.2	200	4.8		3.7	7.3	2.5
15	280	11.4	210	4.6		3.4	7.3	2.6
16	220	11.7				3.2	7.0	2.8
17	240	11.9				2.7	6.5	2.9
18	250	11.7					3.5	3.0
19	280	11.3					3.4	2.9
20	280	10.4					2.2	2.7
21	280	10.0					2.7	2.7
22	250	9.5					3.5	2.9
23	220	8.5					3.5	3.2

Time: 150.0°W.
Length of time sweep: 1.6 Mc to 12.5 Mc in two minutes.
Median values.

Table 9 (Provisional Data)

Clyde, Baffin I. (70.5°N, 68.6°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.7						3.1
01		2.5						3.1
02		2.8						3.1
03								3.0
04								3.1
05		2.2						3.2
06		3.1						3.0
07		4.2						3.2
08		4.5						3.3
09		4.8						3.2
10		5.0						3.2
11		5.0						3.1
12		4.9						3.2
13		5.2						3.1
14		5.6						3.1
15		5.4						3.1
16		5.0						3.2
17		5.3						3.2
18		5.4						3.1
19		5.2						3.1
20		4.6						3.1
21		4.2						3.1
22		3.6						3.1
23		3.3						3.1

Time: 75.0°W
Length of time sweep: 2 Mc to 16 Mc in one minute.
Median values.

Table 10 (Provisional Data)

Burghead, Scotland (57.7°N, 3.5°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.4						
01		3.6						
02		3.6						
03		3.5						
04		3.4						
05		3.4						
06		3.5						
07		4.7						
08		5.8						
09		6.6						
10		7.2						
11		7.4						
12		7.5						
13		7.5						
14		7.5						
15		7.3						
16		7.2						
17		7.0						
18		6.4						
19		5.8						
20		5.0						
21		4.4						
22		3.8						
23		3.5						

Time: 0.0°
Length of time sweep: 1.0 Mc to 13.0 Mc. Manual operation.
Average values

Table 11 (Provisional Data)

Chungking, China (29.4°N, 106.8°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	307	5.3						
01								
02								
03								
04								
05								
06	27?	5.3						
07	2??	7.7						
08	244	8.9						
09	264	9.5						
10	270	11.3						
11	277	13.0D						
12	280	13.3D						
13	258	13.4D						
14	254	13.4D						
15	242	12.9D						
16	232	12.1D						
17	219	11.1						
18	215	9.1						
19	235	7.8						
20	258	7.5						
21	273	6.6						
22	293	6.0						
23	314	5.5						

Time: 105.0°E.
Length of time sweep: 3.3 Mc to 12.3 Mc in fifteen minutes.
Median values.

Table 12 (Provisional Data)

Delhi, India (28.6°N, 77.2°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.2						
01		4.1						
02		3.8						
03		3.7						
04		3.4						
05		3.4						
06		4.9						
07		7.5						
08		8.5						
09		9.6						
10		10.5						
11		11.1						
12		11.9						
13		12.6						
14		13.0						
15		12.6						
16		12.0						
17		11.3						
18		9.6						
19		7.6						
20		6.2						
21		5.6						
22		4.7						
23		4.3						

Time: 75.0°E.
Length of time sweep: Manual operation.
Average values.

Table 13 (Provisional Data)

Leyte, Philippine Is. (11.0°N, 125.0°E) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		9.2					3.8	3.2
01		9.3					3.5	3.3
02		7.9					2.7	3.4
03		5.7					2.5	3.4
04		4.5					2.7	3.2
05		3.6					3.0	3.2
06		3.6					3.3	3.1
07		7.3		2.5		1.9	4.2	3.2
08		9.2		3.6		2.7	5.0	3.1
09		10.6		4.3		3.1	5.5	2.8
10		10.4		4.8		3.5	6.6	2.6
11		9.7		5.0		3.7	6.6	2.5
12		9.4		5.2		3.8	6.4	2.5
13		9.7		5.2		3.8	6.2	2.5
14		10.8		5.1		3.7	6.5	2.5
15		11.4		4.9		3.5	6.0	2.6
16		11.8		4.9		3.2	6.0	2.6
17		11.8		3.7		2.7	5.8	2.6
18		11.5				1.9	5.3	2.6
19		10.8					4.4	2.5
20		9.6					3.4	2.4
21		9.4					3.0	2.8
22		9.2					3.5	3.0
23		9.2					3.8	3.1

Time: 135.0°E.
Length of time sweep: Manual operation.
Median values.

Table 14 (Provisional Data)

Colombo, Ceylon (6.6°N, 80.0°E) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		7.9						3.1
01		6.9						3.2
02		5.8						3.3
03		4.6						3.4
04		3.9						3.5
05								
06		4.9						3.2
07		8.2						3.2
08		9.6						2.9
09		9.7						2.5
10		9.2						2.6
11		9.1						2.5
12		9.4						2.5
13		9.9						2.5
14		10.4						2.6
15		10.8						2.6
16		10.9						2.5
17		10.8						2.5
18		10.6						2.5
19		9.0						2.3
20		9.6						2.5
21		9.3						2.6
22		9.1						2.9
23		8.4						3.2

Time: Local.
Length of time sweep: 2Mc to 16 Mc in one minute.
Average values.

Table 15 (Provisional Data)

Christmas I. (1.9°N, 157.3°W) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	220	9.5					3.3	3.3
01	220	7.8					3.3	3.3
02	220	6.2					2.7	3.3
03	230	5.5					2.6	3.4
04	230	4.8					3.3	3.3
05	230	4.0					3.2	3.3
06	250	4.0					3.0	3.0
07	250	7.2				2.4	3.6	3.1
08	230	9.2				3.1	6.8	2.7
09	290	9.6	220	4.6		3.4	7.1	2.5
10	310	9.2	210	4.9		3.7	9.0	2.5
11	320	9.1	210	5.1		3.7	9.7	2.5
12	330	9.5	210	5.1			9.8	2.5
13	310	10.0	210	5.1			8.6	2.5
14	300	10.5	200	5.0		3.7	7.8	2.4
15	300	10.8	210	4.8		3.5	7.2	2.5
16	230	11.5	220	4.3		3.2	7.0	2.7
17	240	11.8				2.7	6.3	2.7
18	270	11.8				2.1	3.8	2.7
19	300	10.8					3.2	2.6
20	300	10.0					2.1	2.4
21	300	10.3					2.3	2.5
22	250	10.3					3.3	2.9
23	220	10.2					3.4	3.1

Time: 150.0°W.
Length of time sweep: 1.6 Mc to 12.5 Mc in 2 minutes.
Median values.

Table 16 (Provisional Data)

Cape York, Australia (11.0°S, 142.4°E) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		8.0						3.2
01		6.6						3.1
02		5.8						2.9
03		5.2						2.9
04		4.5						2.9
05		4.7						3.0
06		5.9						3.1
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								

Time: Local
Length of time sweep: 1.0 Mc to 13.0 Mc in one minute, fifty-five seconds.
Median values.

Table 17 (Provisional Data)

Rarotonga I. (21.4°S, 159.6°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		9.1						3.1
01		8.4						3.2
02		6.5						3.1
03		5.7						2.8
04		5.6						2.9
05		5.5						3.0
06		6.8						3.1
07	245	8.8						3.2
08	275	9.6		4.7				3.3
09	280	10.2		5.0				3.2
10	295	11.1		5.1				3.2
11	310	11.8		5.2				3.0
12	305	12.2		5.2				3.0
13	315	12.0		5.2				3.0
14	315	11.5		5.2				3.0
15	300	11.6		5.2				2.9
16	300	11.3		4.7				3.0
17	280	11.2						3.1
18	270	11.4						3.1
19	260	10.5						3.0
20		10.0						
21		9.2						
22		9.0						
23		9.0						3.0

Time: 157.5°W.
Length of time sweep: 2.0 Mc to 16.0 Mc. Manual operation.
Median values.

Table 18 (Provisional Data)

Pitcairn I. (25.0°S, 130.0°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
0000								
0100								
0230	213	5.5						
0300								
0400								
0530	283	4.4	260	2.9				
0600								
0730	235	9.0	220	4.0				
0800								
0930	273	10.5	211	4.8				
1000								
1130	279	11.0	213	5.0				
1200								
1330	289	11.0	221	4.9				
1400								
1530	273	10.8	222	4.6				
1600								
1700								
1800								
1930	252	7.6						
2000								
2100								
2230	288	7.7						
2300								

Time: 127.5°W.
Length of time sweep: 1.0 Mc to 13.0 Mc. Manual operation.
Median values.

Table 19 (Provisional Data)

Brisbane, Australia (27.5°S, 153.0°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	265	6.3						3.0
01	250	5.9						3.1
02	245	5.2						3.0
03	265	4.6						3.0
04	275	4.4						3.0
05	260	4.3						3.1
06	230	6.0						3.4
07	230	7.3	215	4.5	110	2.7		3.3
08	260	8.0	205	4.7	110	3.0	3.1	3.2
09	265	8.6	200	4.9	110	3.3	3.6	3.2
10	280	8.8	200	5.1	110	3.5	4.0	3.1
11	280	9.4	190	5.1	105	3.6	3.8	3.1
12	290	9.2	200	5.2	100	3.6		3.1
13	280	9.3	200	5.1	105	3.6		3.1
14	280	9.2	200	5.0	110	3.5		3.1
15	270	9.0	210	4.7	110	3.2		3.1
16	250	8.7	220	4.5	110	2.8		3.2
17	230	8.5					2.9	3.2
18	230	8.2						3.2
19	235	7.4						3.0
20	260	6.9						2.9
21	275	6.9					2.9	2.9
22	275	6.6						2.9
23	270	6.5						3.0

Time: 150.0°E.
Length of time sweep: 2.2 Mc to 12.5 Mc in two minutes, thirty seconds.
Median values.

Table 20 (Provisional Data)

Kermadec Is. (29.2°S, 117.9°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	275	6.5						2.8
01	265	6.1						2.9
02	250	5.4						2.9
03	260	4.7						2.8
04	290	4.4						2.8
05	275	4.4						2.9
06	250	6.6			125	2.0		3.2
07	250	7.6	235	3.8	120	2.6		3.2
08	275	8.4	230	4.3	115	3.0		3.2
09	290	8.6	225	4.6	120	3.3		3.1
10	300	9.0	225	4.8	120	3.4		3.0
11	315	9.2	225	4.8	120	3.5		3.0
12	315	9.2	220	4.9	120	3.6		2.9
13	315	9.1	225	4.8	120	3.6		2.9
14	315	9.0	240	4.8	120	3.4		3.0
15	300	9.0	250	4.5	120	3.2		3.0
16	295	9.0	250	4.2	120	2.8		3.0
17	275	8.9	255	3.6	120	2.5		3.0
18	255	8.4						3.1
19	250	7.8						2.9
20	265	7.4						2.8
21	285	7.2						2.7
22	300	7.1						2.8
23	280	7.0						2.8

Time: 180.0°E
Length of time sweep: 1.8 Mc to 12.0 Mc. Manual operation.
Median values.

Table 21 (Provisional Data)

Watheroo, Australia (30.3°S, 115.9°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.7						2.8
01		4.6						2.9
02		4.2						2.9
03		3.8						2.9
04		3.7						2.9
05		3.9						3.0
06		5.5						3.3
07		6.3						3.2
08		6.8						3.1
09		7.4						3.1
10		8.0						3.0
11		8.6						3.0
12		8.9						3.0
13		8.8						3.0
14		8.6						3.0
15		8.3						3.1
16		8.0						3.1
17		7.9						3.2
18		7.8						3.2
19		6.9						3.1
20		6.0						3.0
21		5.4						2.9
22		5.1						2.8
23		4.9						2.8

Time: Local.
Length of time sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.
Median values.

Table 22 (Provisional Data)

Capetown (Simonstown), Union of S.Africa (33.9°S, 18.7°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.7						2.8
01		3.7						2.8
02		3.6						2.8
03								2.9
04								2.9
05		4.3						3.0
06		4.2						3.1
07		7.1						3.1
08		7.9						3.0
09		8.8						2.8
10		9.4						2.8
11		9.9						2.7
12		10.4						2.8
13		10.6						2.8
14		10.7						2.9
15		10.3						2.9
16		9.6						2.9
17		9.1						3.0
18		8.3						3.0
19		6.9						3.0
20		5.3						3.0
21		4.5						2.9
22		3.9						2.9
23		3.8						2.8

Time: 15.0°E.
Length of time sweep: 2 Mc to 16 Mc in one minute.
Average values.

Table 23 (Provisional Data)

Canberra, Australia (35.3°S, 149.0°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	5.2						2.8
01	280	4.8						2.8
02	270	4.5						2.9
03	270	4.1						2.9
04	275	3.7						2.9
05	280	3.7						2.9
06	250	5.1				2.0		3.1
07	260	5.9	240	4.0	110	2.5		3.0
08	290	6.8	225	4.3	110	3.0		3.0
09	300	7.1	220	4.5	110	3.2		3.0
10	300	7.6	210	4.5	110	3.4		3.0
11	310	8.1	210	4.6	110	3.5		3.0
12	305	8.1	205	4.6	110	3.6		3.0
13	300	8.2	210	4.7	110	3.5		3.0
14	300	7.9	210	4.6	110	3.5		3.0
15	300	7.8	220	4.5	110	3.3		3.0
16	295	7.6	220	4.1	110	3.0		3.0
17	260	7.2	245	3.6	120	2.5		3.0
18	250	7.4						3.0
19	250	7.1						3.0
20	250	6.2						3.0
21	265	5.7					2.4	2.9
22	280	5.5					2.5	2.8
23	280	5.5					2.4	2.8

Time: 150.0°E.
Length of time sweep: 1.6 Mc to 12.5 Mc in two minutes.
Median values.

Table 24 (Provisional Data)

Campbell I. (52.5°S, 169.0°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05	255	4.1		2.2		1.8		2.9
06								
07	265	5.5	225	4.0	110	2.5		3.0
08	300	6.0	220	4.25	110	2.8		3.1
09	295	6.4	220	4.5	110	3.0		3.0
10	305	6.6	210	4.5	110	3.0		3.0
11	305	6.8	210	4.6	110	3.1		2.9
12	305	7.1	220	4.6	110	3.2		3.0
13	310	7.1	220	4.5	110	3.0		3.0
14	305	6.8	220	4.4	110	3.0		3.0
15	300	6.8	225	4.2	110	2.8		3.0
16	275	7.0	235	4.0	110	2.6		3.0
17	250	6.7	240	3.0	120	2.2		2.9
18	255	6.8						2.9
19	250	7.4						2.8
20								
21	260	6.1						2.7
22								
23	280	5.0						2.5

Time: 165.0°E.
Length of time sweep: 1.0 Mc to 15.0 Mc. Manual operation.
Median values.

Table 25 (Provisional Data)

Delhi, India (28.6°N, 77.2°E) September 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.4						
01		4.4						
02		3.9						
03		1.7						
04		3.4						
05		3.3						
06		4.4						
07		6.4						
08		7.5						
09		7.9						
10		8.5						
11		9.7						
12		10.5						
13		10.9						
14		11.1						
15		11.2						
16		11.0						
17		9.4						
18		8.0						
19		7.1						
20		6.1						
21		5.2						
22		4.8						
23		4.5						

Time: 75.0°E.
Length of time sweep: Manual operation.
Average values.

Table 26

Washington, D. C. (39.0°N, 77.5°W) November 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	3.5					2.4	3.0
01	260	3.4					2.4	3.0
02	260	3.5					2.3	3.0
03	260	3.5					2.4	3.0
04	250	3.5					2.3	3.1
05	240	3.4					2.3	3.1
06	240	3.2					3.1	3.1
07	225	5.2			110	(1.7)	4.0	3.4
08	220	7.2	215		110	(2.3)	3.8	3.4
09	230	7.9	210		110	(2.7)	3.8	3.4
10	240	8.8	210		110	(3.0)	3.8	3.4
11	240	8.6	200	(4.3)	110	(3.1)	3.8	3.3
12	245	9.2	210	(4.5)	110	(3.2)	3.8	3.2
13	250	9.4	220	(4.3)	110	(3.1)	3.8	3.2
14	250	9.5	230		110	(3.0)	3.8	3.2
15	230	9.2	220		110	2.6	3.3	3.3
16	230	9.0			110	2.6	2.7	3.3
17	215	8.0			100		2.4	3.4
18	220	6.0					2.4	3.2
19	225	5.2					2.4	3.3
20	240	4.1					2.3	3.2
21	250	3.6					2.3	3.0
22	260	3.4					2.3	3.0
23	270	3.4					2.3	3.0

Time: 75.0°W.
Length of time sweep: 0.75 Mc to 11.5 Mc in 3.4 minutes supplemented by 0.8 Mc to 14.0 Mc in two minutes.
Median values.

Table 27

(Corrections and additions to previously published provisional data)

Churchill, Canada (58.8°N, 94.2°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300						5.1	
01	300						4.1	
02	335						3.9	2.7
03	330						3.8	
04	320						3.7	
05	340						3.8	3.0
06	325	3.6					3.6	2.8
07	280						4.0	
08	270		220	3.3		3.0	3.5	
09	275		220	3.8	120	2.9	3.4	3.0
10	295	6.2	230	4.0	120	2.9		
11	290	6.6	230	4.2	110	2.9		
12	290		240	4.3	120	3.0		
13	290	7.8	240	4.0	120	2.8		3.0
14	280		240	4.0	120	2.7		
15	280		250	3.8	120	2.8		
16	260	7.3	260	3.5	130	2.9		
17	270				135	2.8	3.6	2.8
18	270						3.4	
19	290						3.7	
20	315						3.8	
21	290	4.4					3.8	
22	320						4.9	
23	320	3.6					4.4	

Time: 90.0°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.
Median values.

Table 28

(Corrections and additions to previously published provisional data)

Prince Rupert, Canada (54.3°N, 130.3°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270							
01	305	2.2						
02	300							
03	315	2.1						
04	310							
05	300	2.4						
06	280							
07	230		220	2.9				3.3
08	210		200	3.3	95	1.9		
09	220		180	3.5	90	2.4		3.5
10	220	6.6	180	3.9	90	2.6		
11	220		180	4.0	90	2.8		
12	230		180	4.2	90	2.8		
13	230		190	4.2	90	2.8		
14	220		180	4.0	100	2.7		
15	210		190	3.9	100	2.6		
16	200		190	3.8	100	2.4		
17	200		185	4.0	110	2.2		
18	200	6.5	180	3.4				
19	200		190	3.0				
20	200		195	2.9				
21	210		200	2.5				
22	220							
23	250							

Time: 120.0°W.
Length of time sweep: Manual operation.
Median values.

Table 29

Great Baddow, England (51.7°N, 0.5°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.6						2.7
01		3.5					1.1	2.8
02		3.4					0.9	2.8
03		3.2					0.8	2.8
04		2.9					0.9	3.0
05		2.6						3.0
06		3.2						3.1
07		5.6				1.8	2.4	3.4
08		6.8				2.3	3.2	3.4
09		7.5		4.0		2.6	3.6	3.4
10		8.2		4.1		2.8	3.8	3.3
11		8.3		4.2		2.9	3.4	3.3
12		8.3		4.0		2.9	3.2	3.3
13		8.2		4.0		2.9	3.0	3.3
14		8.4		4.0		2.7	2.7	3.2
15		8.2				2.4	2.6	3.2
16		8.1				2.0	2.3	3.3
17		7.5					2.7	3.2
18		7.2					2.4	3.2
19		6.0					2.2	3.2
20		4.9					2.2	3.1
21		4.4					1.6	2.9
22		3.8					1.7	2.8
23		3.7						2.8

Time: 0.0°.
Length of time sweep: Manual operation.
Median values.

Table 30

(Corrections and additions to previously published provisional data)

Ottawa, Canada (45.5°N, 75.8°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	295							
01	300							
02	300							
03								
04	320	3.0						
05	320							
06	280	3.4						
07	230						2.9	
08	220		220	3.6		2.4	3.8	
09	240		210	3.9	120	2.8	3.5	
10	245	8.0	200	4.2	120	3.0	3.4	
11	265	8.2	210	4.5	110	3.0	4.3	
12	270	8.2	210	4.5	120	3.1	4.2	
13	260	7.8	220	4.3	120	3.1	4.3	
14	260	8.2	225	4.1	120	3.0	2.8	
15	255	8.2	230	3.9	120	2.7		
16	240		230	3.5	130	2.4		
17	239							
18	230							
19	240	6.0						
20	250							
21	260							
22	270							
23	280	4.0						

Time: 75.0°W.
Length of time sweep: 1.93 Mc to 13.5 Mc. Manual operation.
Median values.

Table 31

(Corrections and additions to previously published provisional data)

Boston, Massachusetts (42.4°N, 71.2°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	275							
01	270							
02	270	3.1						
03	270							
04	262						1.8	
05	260	2.6						
06	250				125			
07	240				130	2.2		
08	240				125	2.6		
09	240				122	2.8		
10	240		215		120	3.0		
11	250		225	4.4	120	3.0		
12	242		225	4.6	120	3.0		
13	250		222	4.5	115	3.0		
14	250				125	2.8		
15	245	7.8			125	2.6		
16	245				125	2.1		
17	240				115			
18	235	6.8						
19	245							
20	250							
21	260	4.7						
22	262							
23	270							

Time: 75.0°W.
Length of time sweep: 0.85 Mc to 13.75 Mc in one minute.
Median values.

Table 32

(Corrections and additions to previously published provisional data)

San Francisco, California (37.4°N, 122.2°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270						3.5	
01	270						3.3	
02	270						3.3	
03	270						3.2	
04	270						3.2	
05	260						3.3	
06	260						3.4	
07	230				110	2.1	3.4	
08	230		220	3.8	110	2.6	3.8	
09	240		215	4.3	110	3.0	3.8	
10	260		200	4.4	110	3.2	3.8	
11	270		210	4.6	110	3.3	3.8	
12	280		220	4.8	110	3.4	4.2	
13	270	9.7	220	4.7	110	3.4	3.8	
14	260		230	4.4	110	3.3	3.8	
15	250		230	4.2	110	3.0	3.8	
16	240		230	3.7	110	2.5	3.7	3.4
17	230				110	2.0	3.5	
18	210	5.7					3.4	
19	220						3.7	
20	230						3.2	
21	250						3.0	
22	255						3.6	
23	260						3.6	

Time: 120.0°W.
Length of time sweep: 0.8 Mc to 12.0 Mc in six minutes. Record centered on the hour.
Median values.

Table 33

(Corrections and additions to previously published provisional data)

Baton Rouge, Louisiana (30.5°N, 91.2°W) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300							
01	300							
02	290							
03	280							
04	280							
05	270							
06	250							
07	250		250	3.2	130	2.2		
08	260		240	3.7	130	2.6		
09	280	8.5	230	4.2	120	2.9		
10	280		220	4.4	120	3.1		
11	290		225	4.5	120	3.1		
12	300		240	4.5	120	3.2		
13	290		240	4.6	120	3.2		
14	290		240	4.5	120	3.2		
15	280		240	4.2	120	3.0		
16	260	9.6	250	3.4	120	2.6		
17	250				130	2.4	3.0	
18	240							
19	240	5.0						
20	250							
21	280							
22	300							2.8
23	300							

Time: 90.0°W.
Length of time sweep: 1.9 Mc to 9.8 Mc in three minutes, thirty seconds.
Median values.

Table 34

Maui, Hawaii (20.8°N, 156.5°W) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	255	4.4						3.0
01	250	4.3						3.2
02	245	3.5						3.3
03	230	2.8						3.3
04	305	2.4						3.1
05	262	2.3						3.0
06	310	2.9						2.8
07	250	6.4						3.3
08	235	8.8			100	2.8		3.2
09	235	9.5	230	4.8	108	3.2		3.0
10	280	10.8	222	5.0	100	3.4		2.9
11	300	12.4	210	5.0	110	3.5		3.0
12	300	13.1	212	5.1	105	3.6		2.9
13	300	14.2	215	5.0	110	3.6		3.0
14	285	15.0	218	4.9	105	3.5		3.0
15	268	14.5	220	4.7	100	3.2	3.9	3.1
16	250	13.6	225	4.2	100	2.9	4.4	3.1
17	230	12.3					3.6	3.2
18	215	10.8					3.6	3.3
19	210	7.0					3.6	3.1
20	225	6.6					2.6	2.9
21	240	5.9						2.9
22	255	5.2						3.0
23	260	4.5						3.0

Time: 150.0°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.
Median values.

Table 35

San Juan, Puerto Rico (13.4°N, 66.1°W) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		4.3						3.1
01		4.8						3.1
02		4.6						3.2
03		4.0						3.2
04		3.5						3.1
05		3.0						2.8
06		3.5						3.0
07	230	6.4						3.3
08	260	7.9						3.2
09	290	8.7	220	4.1		3.0		3.1
10	290	9.6	220	4.7		3.2		3.1
11	300	10.1	220	4.7		3.4		3.0
12	300	10.1	220	4.8		3.4		3.0
13	300	10.5	220	4.8		3.4		3.0
14	290	11.1	220	4.6		3.3		3.1
15	280	10.3	220	4.3		3.2		3.1
16	260	10.0	220	3.9		3.0		3.2
17	240	9.4					3.7	3.2
18	230	8.5						3.2
19	240	6.4						3.2
20		5.1						3.0
21		4.6						2.8
22		4.7						2.9
23		4.7						3.0

Time: 60.0°W.
Length of time sweep: Record centered on the hour.
Median values.

Table 36

(Corrections and additions to previously published provisional data)

Trinidad, Brit. West Indies (10.6°N, 61.2°W) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04	280							
05	295							
06								
07	245					2.7		
08						3.0		
09								
10								
11								
12			225					
13								
14							4.1	
15								
16							3.2	
17								
18								
19								
20								
21								
22								
23								

Time: 60.0°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.
Median values.

Table 37

(Corrections and additions to previously published provisional data)

Huancayo, Peru (12.0°S, 75.3°W) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	230							
01	230							
02	240							
03	250							
04	250							
05	260							
06	250					2.0	2.5	
07	240					2.7	3.1	
08	240		240	4.8			5.6	
09	310		230	5.0			5.5	
10	330		230	4.9			5.6	
11	340		220	5.0			5.5	
12	340		220	5.0			5.6	
13	330		220	4.9			5.5	
14	300		210	4.8			5.5	
15	230					3.3	5.5	
16	230					2.8	5.5	
17	260					2.3	3.2	
18	290					1.2		
19	340							
20	330							
21	290							
22	270							
23	250							

Time: 75.0°W.
Length of time sweep: 16.0 Mc to 0.5 Mc in fifteen minutes.
Median values.

Table 38

Christchurch, N. Z. (43.5°S, 172.6°E) October 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	5.2						
01	270	4.8						
02	260	4.5						
03	250	4.0						
04	250	3.5						
05	260	3.6						
06	250	4.9				2.0	2.6	
07	280	5.5	250	4.0		2.6	3.0	
08	300	6.3	230	4.4		3.0	3.2	
09	300	7.0	220	4.5		3.2	3.6	
10	300	7.4	210	4.8		3.3	3.5	
11	300	7.4	220	4.8		3.4	3.6	
12	300	7.7	220	4.8		3.4	3.5	
13	300	7.8	220	4.8		3.4		
14	290	7.8	220	4.6		3.3		
15	300	7.4	220	4.4		3.1	3.1	
16	280	7.2	230	4.2		2.8	3.0	
17	270	7.2	240	3.7		2.4		
18	250	7.4				1.8		
19	250	7.5					1.9	
20	250	7.2					1.7	
21	250	6.5					2.0	
22	270	6.0					2.0	
23	280	5.5						

Time: 172.5°E.
Length of time sweep: 1.0 Mc to 13.0 Mc. Automatic.
Median values.

Table 39

Oslo, Norway (59.9°N, 11.0°E) September 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.1					2.3	
01		3.6					2.2	
02		3.5					2.5	
03		3.2					3.0	
04		3.0					2.8	
05		3.1					2.3	
06		3.7				1.8		
07		4.4				2.0	2.5	
08		5.0				2.3	3.1	
09		5.1		4.0		2.7	3.4	
10		5.2		4.0		3.0	3.4	
11		5.3		4.1		3.0	3.4	
12		5.4		4.2		3.0	3.4	
13		5.3		4.2		3.0		
14		5.4		4.0		3.0		
15		5.3		4.0		2.7		
16		5.4				2.4	3.3	
17		5.4				2.1	2.8	
18		5.4				1.9	2.8	
19		5.4					2.5	
20		5.2					2.5	
21		4.9					2.1	
22		4.8						
23		4.5					2.1	

Time: 15.0°E.
Length of time sweep: 16.0 Mc to 1.63 Mc in ten minutes.
Median values.

Table 40

(Corrections and additions to previously published provisional data)

Chungking, China (29.4°N, 106.8°E) September 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								3.7
07								3.8
08				4.8				3.7
09				5.0				3.7
10				5.1				3.3
11				5.3				3.3
12				5.3				3.5
13				5.3				3.5
14				5.0				3.5
15				4.8				3.6
16				4.5				3.6
17								3.8
18								3.7
19								3.7
20								3.5
21	292							3.4
22	309							3.2
23	308							3.1

Time: 105.0°E.
Length of time sweep: 3.3 Mc to 12.3 Mc in fifteen minutes.
Median values.

Table 41

(Corrections and additions to previously published provisional data)

Maui, Hawaii (20.8°N, 156.5°W) September 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280							2.9
01	270	4.5						3.0
02	250	4.6						3.1
03	220	4.0						
04	225							
05								
06								
07	235	5.8				-		
08			-		100			
09	250				110			
10	315		215		110			
11		9.2			110			
12					110			
13	332				110			
14	315		215		100			
15			225		100			
16			225		100			
17			225		100			
18			-	-				
19	215	7.5						
20							2.5	
21								
22	290							
23	290							

Time: 150.0°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.
Median values.

Table 42

Leyte, Philippine Is. (11.0°N, 125.0°E) September 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		7.6					3.2	3.0
01		7.4					3.6	3.2
02		6.4					3.9	3.3
03		5.7					3.1	3.4
04		4.2					2.6	3.4
05		3.4					2.8	3.4
06		3.1					2.9	3.3
07		6.1		2.6		1.9	4.4	3.3
08		7.7		3.7		2.6	5.0	3.2
09		8.6		4.5		3.2	5.7	2.9
10		8.8		5.0		3.5	5.9	2.6
11		8.4		5.1		3.7	5.0	2.5
12		8.2		5.1		3.9	5.8	2.5
13		8.2		5.1		3.9	6.1	2.5
14		9.1		5.1		3.8	5.3	2.5
15		9.8		5.1		3.6	5.4	2.6
16		10.6		4.7		3.3	4.8	2.7
17		11.0		4.2		2.9	5.2	2.8
18		10.5		3.1		2.3	4.7	2.8
19		9.7				1.6	3.8	2.7
20		9.0					3.2	2.7
21		8.4					2.5	2.7
22		8.2					3.6	2.9
23		8.2					4.0	3.0

Time: 135.0°E
Length of time sweep: Manual operation.
Median values.

Table 43

(Corrections and additions to previously published provisional data)

Christmas I. (1.9°N, 157.3°W) September 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								3.1
01							1.9	3.3
02								3.4
03								3.4
04								
05								3.3
06								3.2
07					100			3.1
08					100			
09					100		7.4	2.6
10					100			
11					100		•	
12	375					-		2.4
13	365				100			
14	355				100			2.5
15					100		8.3	
16					100		7.3	2.7
17					100			2.7
18	245				100			
19								
20							1.9	2.6
21	265							2.7
22							1.6	2.8
23								2.9

Time: 150°W.
Length of time sweep: 1.6 Mc to 12.5 Mc in two minutes.
Median values.

Table 44

(Corrections and additions to previously published provisional data)

Watheroo, W. Australia (30.3°S, 115.9°E) September 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	240						2.8	
01	235	3.8					2.8	
02	225						2.9	
03	230	3.6					2.9	
04	250	3.6					2.8	
05	262	3.4					3.0	
06	260	4.0					3.1	3.1
07	255	5.4				2.0	3.2	
08	245		230	4.1		2.5	3.3	
09	285		225	4.4		2.9	3.7	3.3
10	295		218	4.5		3.1	3.6	
11	300	7.0	220	4.6		3.1	3.6	
12	295	7.6	210	4.5		3.1	3.7	
13	285		210	4.5		3.1	3.8	3.3
14	285	7.2	215	4.5		3.1	3.8	3.3
15	280	7.1	220	4.3		3.0	3.5	
16	260		220	3.9		2.7	3.7	
17	230	6.4				2.1	3.1	3.4
18	225	5.8					2.8	
19	220	5.4					2.4	3.2
20	230	4.6					2.4	
21	240	4.3					2.4	3.1
22	245						2.6	
23	240						2.8	3.0

Time: 120.0°E.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.
Median values.

Table 45

(Corrections and additions to previously published provisional data)

Christchurch, New Zealand (43.5°S, 172.6°E) September 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							-	
01							-	
02							-	
03							-	
04							-	
05		2.2					-	
06							-	
07							2.5	
08							3.0	
09							3.0	
10							-	
11							3.5	
12		6.4					3.2	
13							-	
14							-	
15							-	
16							2.8	
17							2.4	
18							1.6	
19							-	
20							-	
21							-	
22							-	
23							-	

Time: 172.5°E.
Length of time sweep: 1.0 Mc to 13 Mc. Automatic.
Median values.

Table 46

Peshawar, India (34.0°N, 71.5°E) August 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06		4.8				2.7		
07		6.0				3.4		
08		6.7				3.6		3.0
09		6.9				3.6		
10		7.2				3.8		
11		7.9				3.7		
12		8.2				3.7		2.8
13		8.3				3.8		
14		8.6				3.6		
15		8.5				3.6		
16		8.2				3.5		2.9
17		7.6				3.5		
18		7.5				3.4		
19		7.4				3.2		
20		6.9						3.3
21		6.1						
22		5.7						
23								

Time: 75.0°E.
Length of time sweep: Manual operation.
Average values.

Table 47

(Corrections and additions to previously published provisional data)

Delhi, India (28.6°N, 77.2°E) August 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	[illegible]*	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06						3.1		
07						4.3		
08						4.8		
09						6.2		
10						5.6		
11						5.8		
12						5.7		
13						5.8		
14						6.7		
15						5.8		
16						5.1		
17						5.1		
18						5.6		
19						4.9		
20								
21								
22								
23								

Time: 75°E.
Length of time sweep: Manual operation.
Average values.

*Average of f°E and fEs.

Table 48

Bombay, India (19.0°N, 73.0°E) August 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		5.8						3.0
01		5.2						
02		5.0						
03		4.4						
04		4.0						3.2
05		3.5						
06		4.9						
07		6.5						
08		7.3						3.0
09		8.0						
10		8.7						
11		9.8						
12		10.7						2.6
13		11.1						
14		11.3						
15		11.8						
16		11.9						2.7
17		12.2						
18		12.2						
19		10.2						
20		8.7						2.8
21		7.3						
22		6.8						
23		5.8						

Time: 75.0°E.
Length of time sweep: Manual operation.
Average values.

Table 49

Madras, India (13.0°N, 80.2°E) August 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		5.3						2.7
01								
02								
03								
04		3.2						
05								
06		5.5				4.2		
07		7.1				4.1		
08		7.9				4.3		2.8
09		8.1				4.6		
10		8.3				4.8		
11		8.0				4.9		
12		8.0				4.9		2.8
13		8.0				4.8		
14		8.2				4.8		
15		8.6				4.8		
16		9.0				4.7		2.5
17		9.4				4.6		
18		9.8				5.0		
19		9.5				4.6		
20		8.7						3.1
21		7.4						
22		6.9						
23								

Time: 97.5°E.
Length of time sweep: Manual operation.
Average values.

Table 50

(Corrections and additions to previously published provisional data)

Delhi, India (28.6°N, 77.2°E) July 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	fE*	fEs	F2-M3000
00								2.6
01								
02								
03								
04								2.8
05		4.4						
06								
07						4.8		
08						4.7		2.7
09		6.8				6.0		
10						5.6		
11						6.9		
12						6.9		2.5
13						6.5		
14						7.3		
15								
16								2.5
17		9.6						
18								
19								
20								2.8
21								
22								
23								

Time: 75°E.
Length of time sweep: Manual operation.
Average values.

*Average of f°E and fEe.

Table 51

(Corrections and additions to previously published provisional data)

Delhi, India (28.6°N, 77.2°E) June 1945

Time	h'F2	f°F2	h'F1	f°F1	h'E	fE*	fEs	F2-M3000
00								
01		5.6						
02								
03								
04								2.9
05		5.2						
06		5.9				4.1		
07		-				5.1		
08						6.1		2.8
09		7.4				6.3		
10						6.8		
11						7.0		
12						6.9		2.7
13						6.6		
14						7.4		
15								
16		10.2						2.8
17						5.0		
18		9.4				6.9		
19						5.8		
20		7.7						3.2
21		6.5				4.8		
22								
23								

Time: 75°E.
Length of time sweep: Manual operation.
Average values.

*Average of f°E and fEe.

Table 52

F2-M3000

Delhi, India (28.6°N, 77.2°E)

Time	1945 January	February	March	April	May
00	3.0	3.0	2.8	2.9	
01					
02					
03		2.9			
04	3.0		3.0	2.8	2.9
05					
06		3.7			
07					
08	3.3		3.3	3.3	2.9
09		3.3			
10					
11					
12	3.3	3.3	2.9	3.0	2.6
13					
14					
15		3.2			
16	3.3		3.2	3.1	2.9
17					
18		3.3			
19					
20	3.1		3.2	3.4	3.3
21		3.2			
22					
23					

Time: 75.0°E.
Length of time sweep: Manual operation.
Average values.

TABLE 53

IONOSPHERE DATA-I

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of $h'F_2$ in {mc / km} for November (Month) 1945

Records measured by: J.M.C, K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	250	260	270	270	250	240	230	220	230	230	240	230	240	260	240	230	230	220	230	240	260	260	260	260
2	260	260	260	270	280	260	240	220	220	220	240	230	250	260	240	240	220	220	230	230	240	240	250	270
3	280	280	280	280	240	230	220	220	220	220	230	230	240	230	250	230	230	200	210	230	240	220	250	260
4	270	260	260	230	240	230	240	230	220	230	240	220	(270)	240	230	230	220	220	220	240	220	240	260	280
5	280	260	230	230	230	240	230	200[H]	230	220	240	260	240	260	250	250	230	220	210	220	240	250	260	280
6	250	260	260	240	240	230	240	210	220	230	220	240	250	260	230	230	230	220	220	220	230	230	260	260
7	260	280	270	250	230	230	230	210	210	230	240	240	250	250	250	230	230	210	230	230	220	250	270	260
8	270	260	260	250	250	240	240	220	230	240	240	250	240	250	250	250	220	210	210	240	220	270	240	280
9	260	240	230	290	240	(250)	240	280	250	260	280	300	290	280	270	270	230	220	240	230	250	300	300	280
10	300	280	260	280	260	240	280	230	240	260	240	250	260	250	260	240	230	210	240	220	250	260	280	290
11	310	300	(290)	280	260	270	270	240	240	260	250	250	250	270	240	230	230	220	280	220	240	270	270	(310)
12	330	280	290	280	280	280	250	230	240	230	250	(240)	240	230	260	230	230	210	220	240	250	280	260	290
13	(300)	(300)	300	260	270	240	250	220	230	280	250	250	260	250	260	240	220	220	270	240	240	240	(260)	260
14	270	280	280	260	250	230	240	220	230	240	230	250	240	250	250	240	230	220	240	220	220	270	(270)	(270)
15	(270)	280	260	270	260	280	260	230	220	250	250	240	240	240	240	240	230	(220)	210	210	240	260	270	260
16	(270)	260	250	260	270	260	250	230	220	240	240	250	[250][C]	250	240	230	230	220	240	220	220	260	260	250
17	250	250	270	270	270	250	250	230	220	(240)	240	240	230	250	240	230	230	220	200	220	240	260	260	270
18	(270)	280	270	270	260	240	240	230	220	220	230	240	230	240	230	230	230	200	200	220	230	260	290	290
19	270	260	270	260	260	250	240	230	230	230	250	240	250	240	250	230	240	210	220	210	230	240	250	260
20	280	270	260	260	240	220	230	240	240	250	230	240	240	260	240	240	230	220	210	220	230	260	260	270
21	260	260	260	260	230	250	230	220	230	230	240	240	240	260	250	230	240	210	220	250	260	260	270	260
22	280	250	240	240	230	230	230	220	230	220	220	230	230	250	250	230	230	200	210	240	230	240	270	260
23	260	250	250	260	250	240	240	220	220	230	220	[250][C]	250	250	240	230	230	210	220	220	230	250	270	270
24	270	260	260	250	230	220	230	240	210	230	240	240	270	250	250	230	220	210	240	220	240	240	260	270
25	260	260	260	260	240	230	230	230	220	240	240	240	260	250	250	240	240	210	210	230	220	240	260	280
26	260	260	260	250	230	230	220	220	220	230	240	240	240	250	250	240	230	210	220	240	220	[250][A]	[260][A]	(280)
27	290	290	280	270	250	220	220	220	220	240	220	240	260	240	260	(250)	230	240	260	260	240	240	260	250
28	270	280	270	260	250	230	250	230	220	220	240	250	260	230	260	240	230	220	230	220	260	250	[250][A]	260
29	(270)	250	270	280	220	230	250	230	210	(220)	(240)	250	240	250	240	230	220	210	220	220	230	230	280	250
30	250	270	250	250	250	250	250	220	220	230	220	240	220	240	250	240	210	210	250	(240)	240	240	280	270
31																								
Sum																								
Median	270	260	260	260	250	240	240	225	220	230	240	240	245	253	250	230	230	215	220	225	240	250	260	270

TABLE 54

IONOSPHERE DATA-2

Washington, D.C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of f^0F_2 in Mc for November 1945
(Month)

Records measured by: J.M.C.
K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.8 F	3.5 F	3.5 F	3.4 F	3.3 F	3.2 F	3.6 F	6.3	7.6	8.4	9.0	8.6 F	9.8	9.8	9.8	9.8	9.6	8.5	6.8	6.4	5.7	4.6	(4.6) J	(4.3) J
2	(3.8) F	(3.5) J	(3.5)	(3.5)	(3.5)	[3.5] C	(4.0)	(7.1)	(7.8)	8.4	8.8	8.6	9.2	10.0	9.8	9.6	(9.2)	8.2	6.6	6.4	5.2	4.0	3.6	3.5
3	3.4	3.4	3.6 F	3.7	3.8	3.6	3.5	6.0	7.6	8.4	8.8	9.0	9.2	(8.8)	9.0	9.3	9.0	(7.1)	(6.0)	5.3	(4.9)	4.2	3.6	3.5
4	3.6	3.5	3.6	3.4	3.2	3.0	3.0	(6.0)	(8.0)	8.3	8.2	8.0	9.3	9.8	9.8	9.2	9.2	8.6	(7.6)	(7.0)	5.3	(4.8)	(5.0)	4.7
5	5.0	5.0	4.8	4.2	3.5	3.1	2.4	5.1 H	7.2	8.5	9.2	9.6	9.9	9.4	9.6	10.0	9.6	8.4	6.0	4.8	4.1	(3.5)	3.6	3.6
6	3.4	(3.4)	3.3	(3.1)	(3.1)	3.2	2.9	5.4	7.3	8.0	(8.0)	(9.4)	(9.7)	9.4	[8.9] C	8.8	8.8	7.6	5.9	(5.2)	(3.9)	3.3	2.8	3.0
7	2.9	2.9	3.1	3.1	3.1	3.0	2.7	4.9	(6.2)	8.0	8.8	(8.2)	8.7	8.6	9.3	9.2	8.2	(7.2)	5.2	5.3	4.1	3.3	3.2	3.4
8	(3.3)	3.2	3.3	3.2	3.3	3.1	3.0	(5.2)	6.6	7.2	8.4	8.7	9.0	9.8	9.8	(11.0)	10.1	9.0	7.0	(6.3)	(4.9)	4.8	4.8	4.9
9	5.0	4.9	4.5	3.5	(3.2) F	(1.7) F	1.9 F	3.7 F	4.8	5.8	6.6 F	7.8	8.3	9.6	9.9	9.2	9.4	7.3	(6.4)	4.4	(2.8) F	2.5 F	2.2 F	2.2 F
10	2.4 F	2.6	(2.1)	2.3	2.2	2.0	(1.9) F	4.9	6.6	7.6	(7.7)	8.5	8.8	8.6	9.0	9.2	7.6	5.8	5.3	4.6	3.3	2.7	3.3	(2.6) F
11	(2.6) F	2.7 F	(2.7) F J	(2.6) F J	2.2 F	2.0 F	(2.1) F	5.1	7.0	7.6	9.2	9.0	9.6	10.2	9.6	(9.6)	8.6	7.4	6.0	5.5	3.9	(3.1)	2.6	2.4 F
12	2.5 F	2.4 F	2.2 F	2.1 F	2.1 F	1.7	1.9 F	4.8	(6.4)	7.2	8.2	8.5	8.2	8.6	8.8	8.8	8.4	7.6	5.8	(4.9)	(3.6)	3.3	3.3	2.8
13	2.5	2.6	2.7	2.7	2.9	2.7	2.6	5.2	7.0	7.2	8.4	8.8	(9.0)	9.4	10.1	9.5	8.6	6.6	5.6	5.1	4.4	3.7	(3.3)	(3.3)
14	(3.0)	(3.2)	3.3	3.4	3.3	2.9	2.7	5.8	7.4	7.8	7.8	8.8	(8.6)	(9.9)	9.6	(9.2)	8.8	8.0	5.8	(5.1)	(3.7)	(3.2)	2.7	2.9
15	2.4 F	2.4 F	(2.4) F	(2.6) F	(2.6) F	2.5 F	(3.1) F	5.7	7.4	9.0	9.1	9.3	9.2	9.2	9.4	10.0	9.6	8.8	(6.9)	5.3	4.0	4.0	3.8	3.7
16	3.7	3.6	3.5	3.3 F	3.0	3.1	3.0	5.0	6.6	8.4	8.8	(10.4)	[9.8] C	10.0	10.2	10.1	9.3	8.2	7.4	5.6	4.4	4.2	3.9	3.9 F
17	3.7	3.6	3.3	(3.4)	(3.5) F	(3.8)	3.1	5.2	8.0	8.4	10.0	10.2	9.4	10.2	9.6	8.2	9.4	8.2	6.0	4.8	3.7	3.2	3.2	3.0
18	3.0	(3.2)	3.5	3.6	3.9	3.7	3.5	5.2	7.2	7.8	8.9	10.0	9.2	9.7	9.3	(8.8)	8.8	8.0	5.7	4.3	3.5	2.7	2.7	3.0
19	3.1	(3.2)	(3.2)	3.2	3.3	3.5	(3.6)	5.4	7.6	7.8	9.2	8.8	9.6	(9.2)	9.6	(9.0)	9.0	(8.0)	6.2	5.2	(4.0)	3.7	3.2	3.4
20	3.5	3.8	4.2	4.3	4.4	4.3	3.4	5.3	6.7	(8.2)	9.2	8.2	(8.4)	9.0	(8.8)	8.0	8.4	9.0	5.6	4.9	(3.8)	3.2	(3.0)	3.8
21	3.8	3.8	3.8	4.0	4.1	4.1	3.9	5.0	7.6	7.4	8.4	8.6	9.2	9.6	9.4	(9.4)	(9.6)	8.0	6.3	5.2	4.6	(4.3)	4.0	4.4
22	4.9	[4.6] C	4.5	4.6	4.5	4.0	3.6	5.0	7.4	7.8	9.4	8.6	9.0	9.4	9.3	9.1	9.0	7.0	5.5	4.7	4.3	3.6	3.8	3.7 F
23	3.6	3.6	3.4	3.7	3.8	4.0	3.8	5.0	7.4	8.8	7.8	8.3	10.0	10.0	10.0	9.6	9.8	7.2	5.4	4.8	3.8	3.7	3.4	3.5
24	3.6	3.6	3.9	4.0	4.1	4.0	3.2	5.1	7.3	7.6	7.8	8.6	9.6	9.6	9.8	9.0	8.6	7.0	5.7	4.6	4.1	3.7	3.2	3.3
25	(3.6)	3.3	3.4	3.6	3.7	3.6	3.5	5.0	7.2	8.2	9.4	8.6	9.8	9.1	9.4	9.4	8.6	8.0	6.2	5.6	4.7	(3.7)	3.7	4.1
26	4.1	4.0	4.1	4.7	4.8	4.5	4.1	5.4	(8.0)	7.2	(8.8)	8.6	9.0	9.2	9.2	9.0	(9.2)	7.6	6.0	5.5	(4.4)	(3.5)	(3.1) V	(3.3)
27	3.6	3.4	4.0 F	4.6	4.9	5.0	3.6 F	4.9	7.0	7.4	(8.2)	8.4	(9.5)	9.0	(9.4)	8.6	8.8	8.0	6.2	5.8	4.7	3.3 F	3.4	3.2
28	3.0	3.3 F	4.0 F	4.5	4.9	4.9	4.2 F	5.5	7.1	7.4	8.2	9.8	9.8	9.0	9.4	9.0	8.8	8.2	6.6	(6.0)	4.5	3.7	[3.4] A	3.2
29	3.1	3.4 F	3.9 F	4.0 F	3.9 F	(3.3) F	(2.4) F	4.1	7.2	8.8	8.8	10.6	10.1	10.7	9.7	9.8	10.0	8.8	(6.7)	(5.4)	4.8	3.8 F	3.8	3.4 F
30	3.5	3.6 F	(4.0)	4.0 F	(3.8) F	(3.5) F	(4.0) F	(5.3)	7.2	9.0	8.6	9.8	8.4	9.0	9.2	9.2	(7.9)	6.7	5.0	(4.6)	3.9	3.0 F	(2.2) F	(2.3) F
31																								
Sum																								
Median	3.5	3.4	3.5	3.5	3.5	3.4	3.2	5.2	7.2	7.9	8.8	8.6	9.2	9.4	9.5	9.2	9.0	8.0	6.0	5.2	4.1	3.6	3.4	3.4

TABLE 55

IONOSPHERE DATA-3

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Half hourly values of $f^{\circ}F_2$ in {Mo} for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75°W MERIDIAN

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	3.7 F	3.4 F	3.4 F	3.3 F	3.3 F	3.3 F	4.6 F	6.8	8.6	9.0	9.0	9.2	(10.6)	9.8	10.2	9.4	9.8	7.8	6.6	5.7	5.1	(4.6)	(4.5) J	(4.2) J
2	3.6 J	(3.5)	(3.7)	(3.6)	(3.7)	(3.6) J	5.2	7.8	(8.5)	8.4	8.2	9.2	9.4	10.0	9.8	(9.7)	9.0	(7.0)	6.4	5.6	4.3	3.8	3.5	3.4
3	3.4	3.4	3.6 F	3.8	3.6	3.6	4.2	(7.4)	7.8	8.6	9.2	8.7	9.4	9.0	9.0	9.0	(8.7)	6.5	5.7	5.1	4.5	3.7	3.5	3.5
4	3.5	3.6	3.6	3.4	3.2	2.9	4.1	7.2	8.2	(8.6)	7.8	(8.2)	9.8	10.0	(10.0)	(9.7)	(9.0)	(8.0)	7.0	6.0	5.2	4.8	4.8	4.8
5	5.0	4.9	4.7	3.6	3.0	3.0	3.9	6.3	8.0	(9.7)	8.8	9.8	9.7	9.2	9.6	(9.4)	8.9	7.4	5.8	4.3	3.7	3.5	3.6	3.5
6	3.4	(3.2)	3.2	3.2	3.2	3.0	4.0	(6.9)	7.6	8.6	(8.8)	9.7	(9.2)	(8.8)	9.0	9.8	9.4	(6.2)	(5.3)	4.4	3.5	2.9	2.9	3.0
7	2.9	3.0	3.2	3.2	3.1	2.7	3.7	6.2	(7.5)	8.4	8.0	7.8	[8.7] C	9.6	9.2	8.8	7.8	6.1	5.5	4.8	3.7	3.2	3.1	3.3
8	3.3	3.2	3.3	3.2	3.2	3.0	3.8	6.3	7.2	7.8	(8.6)	9.4	9.1	(7.6)	10.6	(11.2)	9.3	8.2	6.4	(6.0)	4.8	4.8	4.7	5.0
9	5.1	4.8	3.7	(3.3) F	[2.0] F	(1.9) F	(2.8) F	4.1	5.5	6.1	7.0 F	8.0	8.6	9.6	9.0	(9.3)	9.4	6.4	4.8	(3.6) F	(3.4) F	2.3 F	(2.1)	2.3 F
10	(2.4)	2.3 F	2.2	2.3	(2.2)	1.8	3.8	5.8	7.0	7.5	8.0	8.6	8.6	8.4	9.1	8.4	6.8	5.9	5.1	4.3	2.7	2.6	2.9 F	2.7 F
11	(2.7)	2.5 F	2.2 F	2.3 F	2.3 F	1.8 F	3.6 F	6.0	6.8	8.0	(8.4)	9.2	10.0	10.0	9.6	9.0	8.0	6.4	(5.3)	4.3	3.8	3.0	2.3 F	2.4 F
12	2.6 F	2.3 F	2.1 F	2.2	2.0	1.7	(3.3)	6.0	7.2	7.4	7.7	8.4	9.0	8.8	9.3	8.4	7.7	(5.8)	(4.9)	4.1	(3.5)	3.2 F	2.8	2.5 F
13	2.5	2.6	3.0	2.8	2.9	2.7	4.0	6.3	7.2	7.8	8.6	9.2	9.4	9.4	10.0	(9.4)	9.7	6.1	5.8	4.8	4.4	(3.5)	(3.3)	(3.2)
14	(3.4)	3.3	3.5	3.5	3.2	2.7	4.2	7.0	7.6	(8.0)	(8.4)	9.6	8.8	9.7	(10.2)	(9.4)	9.1	(7.2)	5.6	4.2	3.5	2.9	2.8	(2.8)
15	(2.7) J	[2.4] C	(2.5) F	2.4 F	2.4 F	2.7 F	3.9	6.6	8.4	[9.1] C	9.0	9.0	9.6	9.4	9.8	9.6	(8.4)	7.6	6.0	4.4	(4.0)	3.9	3.8	3.6
16	3.7	3.5	3.3	(3.4) F	3.0	3.0	3.5 F	6.6	8.2	8.4	8.5	[10.1] C	9.8	(10.0)	10.0	(10.0)	9.0	7.6	7.0	5.8	4.3	4.1	3.9	3.9
17	(3.7)	(3.4)	(3.2)	(3.3)	(3.6) F	(3.2)	(3.6)	6.6	8.4	10.0	9.6	9.4	9.4	10.0	8.8	8.8	9.0	6.6	5.6	4.3	3.3	3.3	3.0	3.0
18	3.2	3.3	3.6	3.7	3.8 F	3.7	3.7	6.6	7.7	8.8	9.6	9.6	9.4	9.6	9.2	8.8	9.0	7.3	5.1	3.6	(3.1) J	2.7	2.7	(3.0)
19	(3.2)	(3.1)	3.2	3.2	3.4 F	3.5	3.9	(7.2)	8.0	8.2	9.2	(9.0)	9.4	9.4	9.4	8.8	8.6	7.1	6.0	4.3	3.7	(3.5)	3.3	(3.3)
20	3.7	4.0	4.1	4.3	4.4	3.9	3.5	6.5	8.2	8.5	8.5	8.8	(9.0)	(8.8)	8.4	8.2	9.2	6.6	5.2	4.2	3.5	(3.6)	3.5	3.9
21	3.8	3.9	3.9	4.3	4.1	(4.1)	3.8	6.2	7.8	7.8	(8.8)	9.4	9.2	9.8	9.6	(9.8)	(9.0)	(6.5)	5.7	4.6	4.4	4.1	4.1	4.5
22	4.7	4.6	4.7	4.3	4.3	3.6	3.8	(6.4)	7.8	8.8	8.8	8.8	9.4	9.2	8.8	9.2	8.2	6.6	5.5	4.6	4.0	3.5	3.8	3.5 F
23	3.6 F	3.5	3.8	4.0	3.8	4.0	4.1	6.8	8.4	8.4	8.6	[9.4] C	9.4	9.8	10.2	9.5	(8.7)	6.3	5.5	(4.4)	3.8	3.4	3.5	3.4
24	3.7	3.8	3.9	4.0	4.0	3.6	3.3	7.0	7.4	7.4	9.2	9.0	10.0	9.5	9.6	(8.7)	7.8	5.9	(5.3)	4.4	4.0	3.3	3.2	3.4
25	3.4	3.4	3.5	3.6	3.8	(3.6)	3.8 F	6.2	7.6	8.3	8.4	9.0	(9.4)	9.4	9.4	9.0	8.7	7.4	6.0	5.4	4.2	3.6	3.7	4.1
26	3.9	4.0	4.3	4.8	4.8	4.4	3.9	6.7	(7.4)	8.0	8.6	9.0	9.0	9.2	8.8	9.2	8.8	(7.4)	5.5	4.7	3.7	3.2	3.2	3.6
27	3.4	3.6 F	3.8 F	(4.6)	5.0	4.4	3.8	6.2	7.0	8.2	8.2	9.0	9.1	8.9	8.8	8.4	8.5	6.8	5.9	5.1	3.9	3.4 F	(3.2)	3.1
28	(3.1) J	(3.5) F	4.1 F	4.8	5.2	4.7 F	4.1	6.4	7.6	7.4	9.4	9.8	9.3	(9.0)	9.0	8.6	8.4	7.4	6.6	5.2	3.9	(3.3)	3.4	3.1
29	3.2 F	(3.5) F	4.0 F	4.3 F	3.9 F	(2.7) F	(2.5) F	6.0	7.4	9.4	9.7	10.6	10.3	9.8	10.2	9.4	(9.8)	(7.0)	(6.6)	(5.6)	4.6	(3.6) F	3.8 F	3.3 F
30	3.6 F	3.8 F	(4.2)	(3.5) F	(3.8) F	(3.5) F	(5.2)	6.6	7.6	9.4	8.6	9.4	8.9	9.1	9.2	9.0	8.0	5.8	(5.2)	4.3	3.2	2.9	(2.2) F	(2.4) F
31																								
Sum																								
Median	3.4	3.4	3.6	3.5	3.5	3.2	3.8	6.6	7.6	8.4	8.6	9.2	9.4	9.4	9.4	9.1	8.6	6.7	5.6	4.5	3.8	3.4	3.4	3.4

TABLE 56

IONOSPHERE DATA- 4

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of $h'F_1$ in {mc / km} for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									220	210	220	220	210	220	210	230								
2										210	210	180	190	(190)	220	230								
3									220	[210]A	210	190	220	200	220	220								
4									210	200	200	200H	200	190	220	220								
5										210	200	200	190H	200H	220	230								
6										200	200	190H	210	190H	230	230								
7									(200)	210H	200	220	190H	230	220	220								
8									210	220	210H	190	200	200	220H	230								
9									240	210H	220	210	230	230	240	230								
10									240	230	200	210	220	210	210	210								
11									210	220	220	200	200H	210	230	220								
12									230	220	210	200H	200	(220)	240	230								
13									230	210	200H	190H	190H	200H	230	230								
14									210	210	200H	210	200	200	230	220								
15									210	230	200	210	210	230	210	230								
16										220	230	220	[230]S	220	230	230								
17									220	220	210	200	200	190H	230	230								
18										(200)	210	200	220	210	210	(220)								
19										210	230	220	230	230	220	220								
20										A	220	200	220	220	220	210								
21										210	210	200	230	200	230	210								
22									210	200	200	190	200	230	230									
23										210	200	[200]S	220	230	230	C								
24										220	210	200H	210	220	230	230								
25										230	A	220	240	220	240									
26										220	220	210	200	220	220	220								
27										230	210	220	220	210	240	A								
28											190H	220	240	220	240									
29										A	A	220	220	220	220									
30										210	210	210	210	220	240	220								
31																								
Sum																								
Median									215	210	210	200	210	220	230	220								

TABLE 57

IONOSPHERE DATA-5

Washington, D.C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of $f^{o}F_1$ in (Mc/sec) for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	(4.2)	L	L								
2										L	L	(4.2)	(4.4)	L	L	L								
3										L	L	L	L	(4.2)	L	L								
4									L	L	L	L^{H}	(4.5)	(3.9)	L	L								
5										L	L	L	L^{H}	3.5^{H}	L	L								
6										L	L	L^{H}	L	4.8^{H}	L									
7									L	L	$(4.1)^{H}$	(4.5)	$(3.8)^{H}$	(4.6)	L	L								
8									L	L	L^{H}	L	$[4.8]^{L}$	4.3	4.0^{H}	3.8								
9									L	L^{H}	(4.3)	4.5	(4.6)	(4.4)	L	(3.7)								
10										L	L	(4.4)	4.5	L	L	3.1								
11									L	L	L	$[4.4]^{L}$	4.5^{H}	$[4.3]^{L}$	L	L								
12									L	L	L	L^{H}	(4.6)	L	L	L								
13										L	L^{H}	$(4.3)^{H}$	L^{H}	L^{H}	L	L								
14									(2.9)	L	L^{H}	(4.2)	L	L	L	L								
15									L	L	L	L	L	L	L	L								
16										L	L	L	C	L	L									
17										L	L	L	L	L^{H}	L	L								
18										L	L	L	L	L	L	L								
19										L	L	L	L	L	L	L								
20										A	L	L	L	L	L	L								
21										L	L	4.0	L	L	L	(3.5)								
22									L	L	L	4.1	L	L	L	L								
23										L	L	C	L	L	L	L								
24										L	L	L^{H}	L	L	L	L								
25										L	L	L	L	L	L									
26											L	L	L	L	L	L								
27										L	L	L	L	L	L	A								
28											L^{H}	L	L	L	L									
29										A	A	L	L	L	L									
30										L	$[3.9]^{L}$	L	L	L	L	L								
31																								
Sum																								
Median									L	L	L	(4.3)	(4.5)	(4.3)	L	L								

TABLE 58

IONOSPHERE DATA-6

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of h'_E in {mc / km} for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								(110)	100	100	110	110	100	100	100	110	110	110						
2								120	120	110	100	100	110	100	100	110	100	100						
3								120	110	110	110	100	100^N	100	100	100	100	90						
4								110	110	110	100	110	100	100	90	100	100	100						
5								120	110	100	100	110	100	90	90	90	120	(90)						
6								110	110	110	110	110	110	100	110	100	100	100						
7								110	120	110	100	100	100	110	110	100	110	100						
8								120	110	110	100	110	100	100	100	110	120							
9								120	110	110	110	100	110	110	110	110	110^H	120						
10								120^N	110	110	110	110	110	110	100	100	100							
11								110	110	110	110	100	110	110	110	110	110							
12								120	120	120	110	110	110	110	110	110	110^H							
13									110	110	110	100	110	110	110	100	110	110						
14								110	110	100	110	110	110	110	110	110	120							
15								110	110	110	110	110	110	110	110	110	120	120						
16									110^N	110	110	110	[100]^C	100	100	110	120^N							
17								110	110	110	110	100	110	100	110	110	120							
18								(110)	110^N	110	110	110	110	110	110	120	120	120						
19									110	110	110	110	110	110	110	110^N	120							
20									110	110	110	(120)	110	110	110	120^N	120^N							
21									110	110	110	110	110	110	110	110	110^N							
22									110	110	100	100	110	110^N	110	100	120	110						
23									110	110	100	[110]^C	110	110	110	110	120							
24									110	100	100	110	110	110	120	110	120							
25									120	110	110	110	110	100	110	100	120^N							
26									120	110	110	110	110	110	110	110	110^N							
27									110	110	110	110	110	100	110	110	110							
28									120^N	110	110	110	120	110	100	110	100	100						
29									120	110	110	110	110	110	110	110	100							
30									110	110	110	110	100	110	110	110^N	120^N							
31																								
Sum																								
Median								110	110	110	110	110	110	110	110	110	110	100						

TABLE 59

IONOSPHERE DATA-7

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of $f^{\circ}E$ in [Mc] for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								(1.7)	2.5	2.8	3.4	[3.2]	(3.8)	(3.9)	(3.1)	[3.0]^{A}	(2.4)	A						
2								(1.9)	2.5	(2.7)	(3.0)	A	B	A	(3.1)	(2.8)	(2.3)	A						
3								(1.8)	(2.8)	(2.8)	(3.4)	(3.2)	(3.3)^{H}	A	A	2.7	A	A						
4								[1.7]^{A}	(2.4)	(2.9)	(3.2)	(3.2)	[3.4]^{B}	(3.3)	(3.1)	(2.7)	A	A						
5								(1.6)	(2.3)	(2.7)	(2.9)	(3.1)	(3.2)	[3.1]^{B}	(3.0)	2.7	2.2	C						
6								1.8	(2.4)	[2.8]^{B}	(3.0)	(3.1)	(3.2)	(3.1)	(2.9)	(2.6)	(2.1)	A						
7								A	(2.4)	2.7	(3.1)	[3.2]^{A}	(3.2)	(3.2)	(3.0)	2.7	2.2	A						
8								(1.6)	2.3	[2.7]^{A}	3.0	(3.2)	3.3	(3.2)	2.9	2.6	2.1							
9								(1.8)	2.3	2.6	(2.9)	(3.2)	(3.1)	(3.1)	(3.0)	[2.8]^{B}	1.8^{H}	A						
10								1.7^{H}	2.3	2.6	(2.8)	(3.0)	(3.1)	(3.1)	(3.0)	2.6	(2.2)							
11								(1.8)	2.3	2.8	(2.9)	(3.1)	(3.2)	(3.0)	(2.9)	2.5	2.0							
12								(1.6)	2.3	(2.8)	(2.8)	(3.1)^{B}	[3.1]^{B}	(3.1)^{B}	2.8	2.5	(1.9)^{H}							
13									(2.3)	[2.6]^{A}	(2.8)	(3.1)^{B}	[3.2]^{B}	(3.1)	[3.0]^{A}	[2.7]^{A}	2.1	A						
14								(1.7)	2.3	(2.6)	(3.0)	(3.2)	(3.2)	[3.2]^{A}	[3.1]^{A}	(2.7)	2.1							
15								(1.7)	(2.3)	(2.8)	[3.0]^{A}	(3.1)^{B}	(3.2)	(3.2)	(2.9)	2.4	(2.0)	A						
16									2.1^{H}	2.7	(2.8)	[3.1]^{A}	[3.2]^{C}	[3.1]^{A}	(3.0)	2.5	(1.8)^{H}							
17								(1.6)	(2.2)	(2.6)	(2.8)	[3.1]^{B}	[3.3]^{B}	(3.0)	(3.0)	[2.6]^{B}	2.2							
18								(1.6)	2.2^{H}	(2.7)	(3.0)	(3.2)	(3.3)	[3.2]^{B}	(3.0)	[2.6]^{A}	(2.2)							
19									2.1	2.6	(3.0)	(3.2)	[3.3]^{A}	[3.2]^{A}	(2.9)	2.5 H	2.0							
20									A	A	A	(3.2)	[3.2]^{B}	(3.2)	(3.0)	2.5H	1.9^{H}							
21									(2.3)	2.4	(3.0)	(3.2)	[3.2]^{B}	(3.2)	(2.9)	2.6	1.9^{H}							
22									2.1	2.7	3.0	(3.1)	(3.2)	3.1^{H}	(3.0)	2.6	(1.9)	A						
23									(2.2)	2.7	3.0	[3.4]^{C}	[3.3]^{B}	[3.1]^{B}	[2.9]^{B}	[2.5]^{C}	(2.0)							
24									(2.3)	(2.7)	(3.0)	(3.1)	(3.2)	(3.1)	2.8	2.7	2.0^{H}							
25									(2.2)	2.6	[2.9]^{A}	(3.2)	A	A	A	(2.7)	(1.9)^{H}							
26									2.2	2.7	(3.0)	[3.2]^{A}	(3.3)^{J}	[3.2]^{A}	3.0	2.6	2.0^{H}							
27									2.2	2.6	(3.0)	(3.2)	(3.2)	(3.1)	2.8	A	A							
28									2.0^{H}	2.5	(2.9)	(3.2)	[3.2]^{B}	(3.0)	(2.9)	2.1	A	A						
29									(2.1)	(2.4)	[2.8]^{A}	[3.1]^{B}	A	B	B	B	(2.4)							
30									[2.1]^{A}	(2.4)	(3.0)	(3.1)	[3.2]^{B}	(3.1)	(2.8)	2.4^{H}	1.2^{H}							
31																								
Sum																								
Median								(1.7)	2.3	(2.7)	(3.0)	(3.1)	(3.2)	(3.1)	(3.0)	2.6	2.0							

TABLE 60

IONOSPHERE DATA - 8

Washington, D.C. — Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of E_s in {Mc / km} for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.7 100	2.8 100	2.8 110	2.8 110	2.7 100	3.9 100	3.8 100	3.8 110	3.6 100	3.7 100			3.9 130	3.8 100	3.7 40	3.8 110	2.9 110	2.5 100	2.3 110	4.9 110	5.1 110	3.6 110	2.5 110	2.4 110
2	2.9 110	3.4 110	2.4 110	2.9 110	2.7 120	2.4 110	3.4 110	2.7 120		3.8 110	3.6 130	3.8 100	3.7 100	3.6 100	4.5 110	4.3 110	2.7 100	4.1 100	4.2 100	2.3 100	2.7 110	2.7 110	2.2 100	3.2 100
3	2.7 100	3.8 100	2.6 100	2.7 100	2.3 100	5.1 110	3.6 100	5.0 90	4.2 100	4.3 100	3.7 110	3.8 100	5.0 100	5.0 100	4.9 100	5.2 90	5.0 100	3.9 90	2.7 90	2.7 90		2.2 90	2.3 100	
4	2.4 110	3.8 110	(2.3) 100	3.8 90	3.6 110	(2.4) 110	3.6 100	6.8 100	6.7 110		4.1 120		3.9 110	4.4 100	3.9 90	4.4 100	4.2 100	3.9 90	2.4 100	2.3 100	2.3 100	2.4 100	2.4 110	
5	3.8 110	4.1 110	2.7 100	2.7 100	2.7 100	2.7 100	4.3 100	(4.9) 110	(3.7) 110	3.8 100	3.8 110		3.7 100	3.7 90	(3.7) 90	(3.8) 90	2.7 110	2.3 90	2.4 100	2.4 100	2.3 100	2.7 90	2.4 90	(2.2) 100
6	3.8 100		2.3 100	3.9 100	3.8 100	4.0 100	2.4 110	3.9 110	6.0 110					5.1 110		3.8 100	3.9 100	2.8 100	2.4 110	2.7 110	(2.3) 110	2.4 100	2.2 90	(2.7) 100
7	(2.7) 100	4.1 110	(2.3) 100	2.4 100	2.8 100	4.1 100	3.8 100	2.8 110	2.7 110	4.9 120	4.0 100	3.8 100	(3.8) 120	3.8 130	3.9 100	3.7 100	4.0 100	(4.0) 100	2.4 100	2.3 100		2.2 100	2.3 100	3.8 120
8	(2.3) 100	3.7 120	3.8 110	3.5 100	2.2 100	(2.3) 120	2.6 110	2.8 130	3.8 110	3.9 110	3.8 110		3.9 100	4.0 100	3.8 110	3.6 120	2.8 100		2.3 100					
9	2.3 100	2.2 100	(2.4) 100	2.4 110	2.3 100	1.7 120	1.2 130	3.9 100	5.1 110	4.2 120		(5.2) 140		3.8 130		(3.8) 90	4.2 90	3.7 120	2.3 110	2.4 120	2.3 110		(2.2) 110	(2.3) 110
10	(2.3) 110	(3.7) 110	2.4 100	(3.7) 100	4.7 110	5.1 110	4.0 100	(4.4) 110	3.8 120	3.7 120	3.8 120	3.8 110	4.0 110	4.4 120	(3.9) 130	3.0 130	(2.5) 100		2.8 110	4.2 110	4.2 110	2.3 100	2.3 110	2.3 100
11					2.3 100	2.1 110	4.2 100	4.7 100	3.8 120		(3.6) 110	(3.7) 100				2.7 120	2.7 100	2.4 100	2.3 100	2.3 120	2.3 100	2.4 100		
12	2.3 100	(3.9) 100		2.4 100	2.4 110	4.1 100	2.8 110	(4.1) 100	2.3 120	3.9 120	(3.9) 120	4.0 120	4.0 110		3.8 120	3.8 120	2.4 100		4.7 110	2.8 100	4.8 110	4.8 110	2.4 110	2.3 110
13	3.9 110	2.5 110		4.1 120	3.9 100	2.2 100	(3.6) 130	2.4 100	5.6 100	3.9 110	3.8 120	3.8 100		4.1 110	4.3 110	4.1 100	2.3 120	3.8 110	4.2 110	6.0 110	2.3 110	2.3 110	(2.2) 100	(4.9) 110
14	4.4 100	4.1 100	2.5 110	(3.8) 110	(3.7) 110	4.0 110	3.6 120	5.1 110	3.7 100	3.9 120	4.0 120	3.9 110	(3.7) 120	4.2 110	4.3 110				2.2 120	2.3 110	2.4 110	4.6 100	3.6 110	4.0 110
15	2.4 110		2.7 120	2.4 120	(2.3) 110	2.4 110	4.1 110	5.4 110	3.9 100	4.1 120	3.8 120	3.9 120	4.0 110	3.9 120		2.7 130	2.4 120	4.6 110	2.3 120	(1.8) 120				2.3 120
16	2.3 110	2.3 110	2.4 110	2.4 120	3.9 110	2.3 120	4.0 110	4.2 110	2.4 120	4.6 120		4.3 110	C	(4.2) 100	4.2 110	4.0 120	3.7 120	2.3 110	2.4 110	2.3 120	2.3 110	2.2 110	2.2 120	2.4 120
17	2.3 120	2.3 120		2.4 110	2.4 110			3.7 110	2.8 110	(3.4) 110		4.4 120	(3.1) 120				2.3 160					2.3 100	2.4 100	2.3 110
18	2.4 100	2.4 110	2.4 110	2.3 110	2.4 100	2.3 110	3.8 110	(4.0) 110	(3.3) 110	3.8 120	3.9 140	3.8 120	(3.6) 120	3.9 110	4.1 110	3.7 110	2.7 100	2.3 110	(2.2) 110		(2.3) 100	2.2 100		2.3 120
19	3.6 110	2.4 100	2.3 100	2.4 110		2.3 120	2.4 120	3.8 100	3.8 110	3.7 120			3.9 110	3.8 110		2.3 110	2.3 120							2.4 120
20					1.0 120	4.1 110	2.4 100	4.8 110	4.7 110	4.8 110	4.0 110		3.9 110		4.5 110				2.1 100	2.4 100	2.4 120			2.4 110
21	2.3 100					(2.2) 100	2.3 100	4.0 100	4.0 120	2.9 130	4.1 130		4.8 120	4.1 120	4.4 120		2.6 110			2.4 110	2.8 110	2.3 110	2.3 100	(2.2) 110
22	2.7 100	2.3 100			1.1 100		2.2 110	(2.5) 100	2.4 100			3.8 100	3.8 100			2.9 120	2.7 120	3.4 110	2.2 120	2.3 120	2.8 110	2.3 110	2.1 110	3.8 110
23					2.1 110			[illegible]	2.7 110	3.9 110	4.0 130					2.7 120	2.8 110	3.9 100	2.7 100	2.3 100		1.7 100	(2.2) 110	
24	2.2 110		2.3 100	1.2 100		2.2 110	4.1 110	4.0 100					3.4 140	3.8 110	2.9 130		3.8 110		2.3 120	2.7 100	2.4 100	2.7 110	2.4 110	
25	2.2 100		2.3 110			1.0 120	2.7 110	4.2 100	2.8 110	4.2 110	4.0 110	4.1 110	4.2 100	4.0 100	4.1 100	(4.0) 100	4.0 100	2.4 100	2.4 100	2.4 110	2.2 100	2.3 100	2.3 110	2.3 120
26	(3.3) 100	2.3 100	4.0 100	2.4 110	2.3 110	4.1 110	4.1 110	4.1 100	2.8 120	4.1 110	3.8 120	3.9 110	4.1 110	3.9 110	3.7 130			2.8 110	4.0 110	3.0 110	4.0 110	4.9 100	4.6 100	(3.1) 100
27	3.2 110	2.6 110		2.3 100			2.8 110	3.0 110	4.2 110					3.7 120	7.0 110	5.9 110	2.8 100	3.7 110	4.7 110	5.5 110	4.0 100	2.7 110	(2.3) 110	
28		2.4 110	2.3 100	2.4 110	1.1 110	2.2 110	2.2 110	3.8 100	3.8 90						2.9 130	2.7 110	2.4 100	2.4 100	2.3 100	6.2 100	5.2 110	4.3 110	7.2 110	7.4 110
29	6.6 100	5.3 110	3.8 110	2.7 110	2.4 110		2.3 100	3.0 140	5.2 120	11.5 110	5.1 110		3.8 110				3.7 100	2.7 100	2.1 140	4.3 120	2.7 110	4.1 110	4.8 110	5.1 110
30	4.8 100		2.1 100				2.3 110	2.4 110	2.7 110	2.9 110							2.3 100	3.2 110	5.2 110	7.0 100	4.2 110	2.8 110	2.6 110	2.7 110
31																								
Sum																								
Median	2.4	2.4	2.3	2.4	2.3	2.3	3.1	4.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.3	2.7	2.4	2.4	2.4	2.3	2.3	2.3	2.3

TABLE 61

IONOSPHERE DATA-9

Washington, D.C. (Location) Ionosphere Station

National Bureau of Standards (Institution)

Hourly values of F2-M1500 for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.1)F	(2.2)F	2.0F	2.1F	(2.1)F	(2.1)F	(2.1)F	2.5	2.3	2.4	2.4	2.1F	2.2	2.2	2.6	2.2	2.3	2.2	2.2	2.1	2.1	(2.0)	C	C
2	(2.1)F	C	(2.1)	(2.1)	(2.0)	C	(2.4)	(2.0)	(2.4)	2.4	2.4	2.3	2.3	2.2	2.1	2.2	(2.3)	2.3	2.2	2.3	2.3	2.1	2.0	1.9
3	2.0	2.0	(1.9)F	2.0	2.1	2.1	2.3	2.6	2.7	2.5	2.4	2.3	2.3	(2.2)	2.2	2.3	2.3	(2.5)	(2.2)	2.2	(2.2)	2.1	2.0	1.9
4	2.0	2.0	2.0	2.1	2.1	2.1	2.2	(2.6)	(2.6)	2.6	2.6	2.1	2.3	2.1	2.3	2.3	2.1	2.2	(2.4)	(2.2)	2.1	(2.0)	2.0	1.8
5	1.9	2.0	2.2	2.3	2.2	2.0	2.2	2.4H	(2.4)	2.3	2.4	2.4	2.3	2.3	2.2	2.2	2.3	2.4	2.3	2.3	2.0	(2.2)	2.0	2.1
6	2.1	(2.1)	2.1	(2.0)	(2.1)	2.2	2.2	2.4	2.5	2.4	(2.5)	(2.3)	(2.2)	2.3	C	2.3	2.4	2.5	2.3	(2.4)	(2.2)	2.3	2.1	(2.1)
7	2.0	2.0	1.9	2.1	2.2	2.3	2.3	2.5	(2.4)	2.3	2.4	(2.4)	2.3	2.3	2.2	2.4	2.5	2.4	2.2	2.3	2.3	2.1	2.0	(2.0)
8	(2.0)	2.0	2.0	2.1	2.1	2.1	2.2	(2.0)	2.5	2.4	2.4	2.2	2.3	2.1	2.1	(2.2)	2.4	2.3	2.2	(2.2)	(2.1)	2.0	1.9	1.9
9	1.9	2.1	1.9	1.9	(2.2)F	(2.0)F	(1.9)F	(2.1)F	2.2	2.3	2.1	2.0	1.9	1.9	2.2	2.1	(2.3)	2.2	(2.1)	2.2	(1.9)F	(1.8)F	(1.7)F	(1.8)F
10	(2.0)F	(2.0)	(2.3)	2.0	2.1	2.0	(2.0)F	2.3	2.3	2.4	(2.3)	2.3	2.2	2.1	2.2	2.4	2.4	2.3	2.2	2.2	2.2	2.0	1.9	(2.0)F
11	(1.8)F	(2.0)F	C	C	(2.1)F	(1.9)F	(2.0)F	2.4	2.3	2.2	2.3	2.2	2.2	2.3	2.2	(2.1	2.3	2.2	2.2	2.4	2.1	(2.0)	1.9	(1.9)F
12	(1.9)F	(2.1)F	1.9F	2.0F	2.0F	2.0	(1.9)F	2.3	(2.4)	2.3	2.4	2.3	2.3	2.1	2.2	2.2	2.3	2.4	2.0	(2.4)	(2.1)	2.0	2.0	2.0
13	1.8	1.8	1.9	2.0	2.0	2.2	2.2	2.4	2.4	2.3	2.2	2.2	(2.2)	2.0	2.2	2.3	2.2	2.4	2.1	2.2	2.1	2.0	(2.0)	(1.9)
14	(1.9)	(1.8)	(1.9)	2.0	2.0	2.2	2.2	2.4	2.4	2.4	2.4	2.2	(2.2)	(2.3)	2.1	(2.3)	2.5	2.3	2.2	(2.5)	(2.4)	(2.2)	1.9	2.0
15	(2.1)F	2.1)F	(2.1)F	(2.0)F	(1.9)F	(2.1)F	(2.1)F	1.9	2.5	2.3	2.3	2.3	2.3	2.2	2.1	2.2	2.4	2.3	(2.3)	2.1	2.1	2.0	2.0	2.0
16	2.0	2.0	2.1	2.0F	2.0	2.0	2.2	2.4	2.5	2.4	2.5	(2.3)	C	2.1	2.2	2.3	2.3	2.2	2.1	2.3	2.3	2.0	2.1	2.1F
17	2.0	2.0	1.9	2.0	(2.0)F	(1.9)	2.0	2.4	2.5	(2.4)	2.4	2.4	2.2	2.3	2.4	2.4	2.2	2.4	(2.1)	2.3	2.2	2.0	2.0	2.0
18	1.9	(2.0)	2.3	2.0	2.1	2.0	2.1	2.3	2.4	2.5	2.5	2.3	2.1	2.3	2.3	(2.4)	2.3	2.5	2.4	2.3	2.2	2.1	1.9	1.9
19	2.0	(2.1)	(2.0)	2.0	2.0	2.1	(2.1)	2.4	2.5	2.4	2.3	2.4	2.2	(2.2)	2.2	(2.3)	2.4	(2.4)	2.2	(2.3)	(2.3)	(2.1)	2.2	2.0
20	2.0	2.0	1.9	2.0	2.0	2.2	(2.2)	2.2	2.4	(2.3)	2.2	2.3	(2.4)	2.4	(2.4)	2.2	2.2	2.5	2.2	2.2	(1.9)	(2.0)	(2.0)	2.0
21	2.0	2.0	2.0	2.1	2.2	2.2	2.3	2.5	2.5	2.6	2.4	2.3	(2.4)	2.3	2.3	(2.2)	(2.3)	2.4	2.1	2.3	2.1	(2.0)	2.0	2.1
22	2.1	C	2.0	2.1	2.1	2.2	2.3	2.5	2.3	2.4	2.6	2.3	2.1	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.2	2.2	2.0	2.1F
23	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.5	2.5	2.5	2.5	C	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.0	2.0	2.0
24	2.0	2.0	2.0	2.1	2.1	2.3	2.1	2.3	2.5	2.4	2.4	2.3	2.1	2.2	2.2	2.3	2.2	2.3	2.4	2.2	2.3	(2.4)	2.1	2.0
25	(2.2)	2.0	2.0	2.0	2.1	2.1	2.1	2.4	2.5	2.5	2.3	2.3	2.2	2.2	2.3	2.4	2.3	2.4	2.3	2.1	2.1	(2.2)	(2.2)	1.9
26	2.0	1.9	2.0	1.9	2.0	2.2	2.1	2.3	(2.3)	2.0	(2.5)	2.4	2.3	2.2	2.3	2.2	2.4	2.3	2.3	2.2	(2.3)	A	A	(2.0)
27	2.0	1.9	(2.0)F	2.0	2.1	2.4	2.3F	2.3	2.5	2.5	(2.4)	2.2	(2.3)	2.2	(2.2)	2.3	2.3	2.3	2.1	2.3	2.3	2.1F	2.1	2.1
28	2.0	1.9F	(1.8)F	2.0	2.1	2.4	2.3F	2.4	2.5	2.5	2.4	2.4	2.4	2.3	2.1	2.3	2.2	2.2	2.2	(2.5)	2.3	2.0	A	2.0
29	2.0	(2.0)F	(1.9)F	(1.9)F	(2.2)F	(2.0)F	(2.0)F	2.3	2.5	2.6	2.2	2.2	2.2	2.2	2.1	2.3	2.2	(2.4)	(2.2)	(2.3)	2.4	2.1F	2.1	2.1F
30	2.2	2.0F	(2.1)	(2.1)F	(2.0)F	(2.1)F	(2.1)F	(2.6)	2.5	2.5	(2.3)	2.4	2.2	2.2	2.4	2.4	(2.5)	2.4	2.3	(2.1)	2.2	2.2F	(2.1)F	(2.1)F
31																								
Sum																								
Median	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.2	2.0	2.0	2.0

TABLE 62

IONOSPHERE DATA-10

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of F2-M3000 for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(3.1)F	(3.2)F	3.0F	3.1F	(3.1)F	(3.1)F	(3.1)F	3.5	3.3	3.4	3.4	3.1F	3.2	3.2	3.0	3.2	3.3	3.2	3.2	3.1	3.1	(3.0)	C	C
2	(3.1)F	C	(3.1)	(3.1)	(3.0)	C	(3.4)	3.6	(3.4)	3.5	3.4	3.3	3.3	3.2	3.1	3.2	(3.3)	3.3	3.2	3.3	3.3	3.1	3.0	2.9
3	3.0	3.0	(2.9)F	3.0	3.1	3.1	3.3	3.6	3.4	3.5	3.4	3.3	3.3	(3.2)	3.2	3.3	3.3	(3.5)	(3.2)	3.2	(3.2)	3.1	3.0	2.9
4	3.0	3.0	3.0	3.1	3.1	3.1	3.2	(3.6)	(3.6)	3.6	3.6	3.1	3.3	3.1	3.3	3.3	3.1	3.2	(3.4)	(3.2)	3.1	(3.0)	(3.0)	2.8
5	2.9	3.0	3.2	3.4	3.2	3.0	3.2	3.4H	(3.4)	3.3	3.4	3.4	3.3	3.3	3.2	3.2	3.3	3.5	3.3	3.3	3.0	(3.2)	3.0	3.1
6	3.1	(3.1)	3.1	(3.0)	(3.1)	3.2	3.2	3.4	3.5	3.4	(3.5)	(3.3)	(3.2)	3.3	C	3.3	3.4	3.5	3.3	(3.4)	(3.2)	3.3	3.1	(3.1)
7	2.9	3.0	2.8	3.1	3.2	3.3	3.3	3.5	(3.4)	3.3	3.4	(3.4)	3.3	3.3	3.2	3.4	3.5	3.4	3.2	3.3	3.3	3.1	3.0	(3.0)
8	(3.0)	3.0	3.0	3.1	3.1	3.1	3.2	(3.6)	3.5	3.4	3.4	3.2	3.3	3.1	3.1	(3.2)	3.4	3.3	3.2	(3.2)	(3.1)	3.0	2.8	2.8
9	2.9	3.1	2.9	2.8	(3.2)F	(2.9)F	(2.9)F	(3.1)F	3.2	3.3	3.1F	3.0	2.9	2.9	3.2	3.1	(3.3)	3.2	(3.1)	3.3	(2.9)F	(2.8)F	(2.6)F	(2.7)F
10	(3.0)F	(3.0)	(3.3)	3.0	3.1	3.0	(3.0)F	3.3	3.3	3.4	(3.3)	3.3	3.2	3.1	3.2	3.4	3.4	3.3	3.2	3.2	3.2	3.0	2.9	(3.0)F
11	(2.8)F	(2.9)F	C J	C J	(3.1)F	(2.8)F	(3.0)F	3.4	3.3	3.2	3.3	3.2	3.2	3.3	3.2	(3.1)	3.3	3.2	3.2	3.4	3.1	(3.0)	2.9	(2.9)F
12	(2.9)F	(3.1)F	2.8F	3.0F	3.0F	(3.0)	(2.9)F	3.3	(3.4)	3.3	3.4	3.4	3.3	3.1	3.3	3.2	3.3	3.4	3.0	(3.4)	(3.1)	3.0	3.0	3.0
13	2.8	2.8	2.8	3.0	3.0	3.2	3.2	3.4	3.4	3.3	3.2	3.2	(3.2)	3.0	3.2	3.3	3.2	3.4	3.1	3.2	3.1	3.0	(3.0)	(2.9)
14	(2.9)	(2.7)	(2.9)	3.0	3.0	3.2	3.2	3.4	3.4	3.4	3.4	3.2	(3.2)	(3.3)	3.2	(3.4)	3.5	3.3	3.2	(3.6)	(3.4)	(3.2)	2.9	3.0
15	(3.1)F	(3.1)F	(3.1)F	(2.9)F	(2.9)F	(3.1)F	(3.1)F	2.9	3.5	3.3	3.3	3.3	3.3	3.2	3.1	3.2	3.4	3.3	(3.3)	3.1	3.1	3.0	3.0	3.0
16	2.9	3.0	3.1	3.0F	3.0	3.0	3.1	3.4	3.5	3.5	3.5	(3.3)	C	3.1	3.2	3.3	3.3	3.2	3.1	3.3	3.3	3.0	3.1	3.1F
17	3.0	3.0	2.9	(3.0)	(3.0)F	(2.9)	3.0	3.4	3.5	(3.4)	3.5	3.4	3.2	3.3	3.4	3.4	3.2	3.4	(3.1)	3.3	3.2	3.0	3.0	2.9
18	2.9	(3.0)	3.3	3.0	3.1	3.0	3.1	3.3	3.4	3.5	3.5	3.3	3.1	3.3	3.3	(3.4)	3.3	3.5	3.4	3.3	3.2	3.1	2.9	2.9
19	3.0	(3.1)	(3.0)	3.0	3.0	3.1	(3.1)	3.5	3.5	3.4	3.3	3.4	3.2	(3.3)	3.2	(3.3)	3.4	(3.4)	3.2	(3.3)	(3.3)	(3.1)	3.2	3.0
20	3.0	3.0	2.9	3.0	3.0	3.2	(3.2)	3.2	3.4	(3.3)	3.2	3.3	(3.4)	3.4	(3.4)	3.2	3.2	3.5	3.2	3.2	(2.9)	(3.0)	(3.0)	2.9
21	3.0	3.0	3.0	3.1	3.2	3.2	3.3	3.5	3.6	3.7	3.4	3.3	(3.4)	3.3	3.3	(3.2)	(3.3)	3.4	3.1	3.3	3.1	(3.0)	3.0	3.1
22	3.1	C	3.0	3.1	3.1	3.2	3.3	3.6	3.3	3.4	3.6	3.3	3.1	3.2	3.2	3.3	3.3	3.2	3.2	3.3	3.2	3.2	3.0	3.1F
23	3.1	3.1	3.0	3.0	3.0	3.1	3.1	3.5	3.5	3.5	3.5	C	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.2	3.2	3.0	3.0	3.0
24	3.0	3.0	3.0	3.1	3.1	3.3	3.1	3.3	3.5	3.5	3.4	3.3	3.1	3.2	3.2	3.4	3.2	3.3	3.4	3.2	3.3	(3.4)	3.1	3.0
25	(3.2)	3.0	3.0	3.0	3.1	3.1	3.1	3.4	3.5	3.5	3.3	3.3	3.2	3.2	3.3	3.4	3.3	3.4	3.3	3.1	3.0	3.2	(3.2)	2.9
26	3.0	2.9	2.9	2.8	3.0	3.2	3.1	3.3	(3.3)	3.0	(3.5)	3.4	3.3	3.2	3.3	3.2	(3.4)	3.3	3.3	3.2	(3.3)	A	A	(3.0)
27	3.0	2.9	(2.9)F	2.9	3.1	3.4	3.3F	3.3	3.5	3.5	(3.4)	3.2	(3.3)	3.2	(3.2)	3.3	3.3	3.4	3.1	3.3	3.4	3.1F	3.1	3.1
28	3.0	2.9F	(2.8)F	3.0	3.1	3.4	3.4F	3.4	3.5	3.5	3.4	3.4	3.4	3.3	3.1	3.3	3.2	3.2	3.2	(3.5)	3.3	3.0	A	3.0
29	3.0	(3.0)F	(2.9)F	(2.9)F	(3.2)F	(3.0)F	(3.0)F	3.4	3.6	3.6	3.2	3.2	3.2	3.3	3.1	3.3	3.2	(3.4)	(3.2)	(3.3)	3.4	3.1F	3.1	3.1F
30	3.2	3.0F	(3.1)	(3.1)F	(3.0)F	(3.1)F	(3.1)F	(3.6)	3.5	3.5	(3.3)	3.4	3.2	3.2	3.4	3.4	(3.5)	3.4	3.3	(3.1)	3.2	3.2F	(3.1)F	(3.1)F
31																								
Sum																								
Median	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.2	3.3	3.3	3.4	3.2	3.3	3.2	3.0	3.0	3.0

TABLE 63

IONOSPHERE DATA - II

Washington, D.C. (Location) Ionosphere Station

National Bureau of Standards (Institution)

Hourly values of FI-M3000 for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	L	L	L								
2										L	L	(4.1)	(3.8)	L	L	L								
3										LA	L	L	L	(3.8)	L	L								
4									L	L	L	L^H	(3.8)	(4.2)	L	L								
5										L	L	L	L^H	L^H	L	L								
6										L	L	L^H	L	3.8^H	L									
7									L	L	$(3.9)^H$	L	L^H	L	L	L								
8									L	L	L^H	L	L	3.8	$(3.7)^H$	L								
9									L	LH	(3.7)	3.4	L	L	L	L								
10										L	L	L	3.6	L	L	(3.9)								
11									L	L	L	L	3.8^H	L	L	L								
12									L	L	L	L^H	(3.7)L	L	L	L								
13										L	L^H	$(3.8)^H$	L^H	L^H	L	L								
14									(4.1)	L	L^H	(4.1)L	L	L	L	L								
15									L	L	L	L	L	L	L	L								
16										L	L	L	C	L	L									
17										L	L	L	L	L^H	L	L								
18										L	L	L	L	L	L	L								
19										L	L	L	L	L	L	L								
20										A	L	L	L	L	L	L								
21										L	L	4.2	L	L	L	L								
22									L	L	L	4.1	L	L	L									
23										L	L	C	L	L	L	L								
24										L	L	L^H	L	L	L	L								
25										L	L	L	L	L	L									
26										L	L	L	L	L	L	L								
27										L	L	L	L	L	L	A								
28											L^H	L	L	L	L									
29										A	LA	L	L	L	L									
30										L	L	L	L	L	L	L								
31																								
Sum																								
Median									L	L	L	4.1	(3.8)	L	L	L								

TABLE 64

IONOSPHERE DATA-12

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of E-M1500 for November (Month) 1945

Records measured by: J.M.C. K.W.S.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								(3.8)	(3.8)B	4.0	C	B	(4.2)	(4.0)	(4.2)	A	A	A						
2								(3.6)	4.1	(4.2)	(4.0)	A	B	A	(4.2)	(4.5)	A	A						
3								(3.6)	(4.4)	(4.0)	(4.0)	(4.2)	(3.9)H	A	A	(4.5)	A	A						
4								A	(4.1)	(4.0)C	(4.2)	(4.2)	B	(4.1)	(4.2)	(4.3)	A	A						
5								(3.9)	A	(4.1)	(4.2)	(4.1)	(4.1)	B	(4.3)	4.2	3.9	C						
6								3.7	A	B	(4.1)	(4.1)	(4.1)	(4.0)	(4.0)	(4.2)	(4.4)	A						
7								A	(3.9)	(4.1)	(4.2)	A	(4.1)	(4.0)	(4.1)	4.2	(4.0)	A						
8								(3.5)	4.1	Ac	4.0	(4.2)	(4.0)	(4.3)	4.0	(4.4)	4.2							
9								A	3.7	(4.2)	(4.2)	(4.0)	(4.1)	(4.3)	(4.2)	B	(4.4)H	A						
10								(3.7)H	(4.2)	(4.3)	(4.2)	(4.1)	(4.0)	(4.0)	(4.1)	(4.1)	(4.0)							
11								(4.0)	(4.2)	4.1	(4.1)	(3.9)	(4.0)	(4.1)	(4.2)	(4.3)	4.0							
12								(4.2)	4.2	(4.0)	(4.3)	(4.1)B	(3.7)B	(4.0)B	4.2	4.3	(4.3)H							
13									(4.3)	A	(4.2)	(4.0)B	B	(4.1)	A-B	AB	4.0	A						
14								(3.9)	(4.5)	(4.1)	(4.0)	(4.0) B	(4.2)	A B	A	(4.0)	(4.2)							
15								A	(4.1)	(4.3)	A	(4.0) B	(4.0)	4.1	(4.1)	(4.4)	(4.4)	A						
16									(4.3)H	(4.1)	(4.2)	A	C	A B	(4.2)	4.3	(4.4)H							
17								(4.4)	(4.5)	(4.2)	(4.0)	B	B	(4.3)	(4.2)	B	3.8							
18								(4.2)	(4.4)H	(4.2)	(4.1)	(4.0)	(4.1)	B	(4.1)	AB	(4.2)	B						
19									4.1	4.0	4.0)	(4.0)	A B	A	(4.4)	(4.2)H	4.1							
20									A	4	4	(4.1)	B	(4.2)	(4.1)	4.3H	(4.2)H							
21									(4.2)	(4.1)	(4.2) B	(4.1)	B	(4.1)B	(4.2)	(4.3)	(4.0)H							
22									(4.0)	(4.2)	4.0	(4.1)	(4.1)	(4.0)H	(4.1)	(4.1)	A	A						
23									(4.1)	(4.2)	(4.1)	C	B	B	B	C	4							
24									(3.8)	(3.8)	(4.1)	(4.1)	(4.1)	(4.2)	4.4	4.1	(4.3)H							
25									(4.0)	A	A	(4.0)	A	A	A	(4.1)	(4.0)H							
26									(4.1)	4.1	(4.1)	A	J B	A B	(4.1)	4.4	(4.5)H							
27									(4.0)	4.1	(4.0)	(4.0)	(4.0)	(4.2)	4.3	A	A							
28									(4.1)H	4.2	(4.1)	(4.1)	B	(4.0)B	(4.1)	4.4	A	A						
29									(4.0)	A	A	B	A	B	B	B	(4.4)B							
30									A	A	(4.3)	(4.2)	B	(4.1)B	(4.3)	(4.2)H	(4.4)H							
31																								
Sum																								
Median								(3.8)	(4.1)	(4.1)	(4.1)	(4.1)	(4.1)	(4.1)	(4.2)	(4.3)	(4.2)							

Table 65

Ionospheric Storminess, November 1945

Day	Ionospheric Character* 00-12 GCT	12-24 GCT	Principal Storms/ Beginning GCT	End GCT	Geomagnetic Character** 00-12 GCT	12-24 GCT
November						
1	1	1			1	0
2	1	2			0	1
3	2	2			1	0
4	1	2			0	2
5	1	2			2	1
6	1	1			0	0
7	2	2			0	1
8	1	1			0	2
9	3	3			4	3
10	3	3			3	1
11	3	1			3	2
12	3	2			3	2
13	3	2			2	2
14	2	2			2	1
15	2	1			2	2
16	1	1			2	2
17	1	1			2	1
18	2	1			1	1
19	2	2			1	1
20	1	3			1	0
21	1	2			0	1
22	1	2			1	1
23	1	1			1	1
24	1	2			1	0
25	1	2			0	1
26	1	2			0	1
27	2	2			1	1
28	1	2			1	1
29	1	1			2	2
30	1	1			1	0

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of American magnetic K-figure, determined by a number of observatories, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

/No major storms were observed at Washington during November 1945.

Table 66

Provisional Radio Propagation Quality Figures
October 1945
Compared with IRPL and ISIB Warnings and IRPL A-Zone Forecasts.

Day	North Atlantic									North Pacific					
	Quality Figure		IRPL Warning		ISIB Warning		A-Zone Forecast	Geomagnetic K_A		Quality Figure		IRPL Warning		A-Zone Forecast	Geomagnetic K_A
	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT	13-24 GCT
1	6	7	X	X			5	1	1	6	7	X	X	5	1	1
2	6	7	X	X			5	1	1	7	8	X	X	5	1	1
3	6	7					5	1	1	7	8			5	1	1
4	7	7					5	0	1	7	8			5	0	1
5	7	7					(4)	2	2	7	8			(4)	2	2
6	6	7					5	0	1	7	7			5	0	1
7	6	7					5	1	2	6	5			5	1	2
8	6	7					5	2	2	6	7			5	2	2
9	6	7					5	2	1	7	7			5	2	1
10	6	7					6	0	0	7	7			6	0	0
11	6	7					6	0	0	7	7			6	0	0
12	6	6		X		X	6	2	4	6	6		X	6	2	4
13	5	6	X	X	X		5	3	1	7	6	X	X	5	3	1
14	5	6	X	X			(4)	1	2	6	7	X	X	(4)	1	2
15	5	7			X	X	(4)	2	2	6	7			(4)	2	2
16	5	7					5	2	2	6	6			5	2	2
17	5	7					5	1	2	6	6			5	1	2
18	5	7					5	2	2	6	7			5	2	2
19	6	7					5	1	2	6	7			5	1	2
20	6	7					6	1	2	6	7			6	1	2
21	6	7					5	0	1	6	7			5	0	1
22	6	7					(4)	1	2	6	7			(4)	1	2
23	6	7					(4)	1	2	7	7			(4)	1	2
24	5	6					5	4	5	6	7			5	4	5
25	(4)	(4)	X	X	X	X	6	4	3	6	6	X	X	6	4	3
26	(4)	6	X	X	X	X	6	1	0	6	7	X	X	6	1	0
27	6	6					6	1	3	7	7			6	1	3
28	5	6	X	X	X	X	7	3	3	6	6	X	X	7	3	3
29	6	6	X	X	X	X	7	2	2	6	6	X	X	7	2	2
30	6	6					6	1	2	7	7			6	1	2
31	7	7					5	1	1	6	7			5	1	1
Score:																
H			2		2		0					0		0		
M			0		0		2					0		0		
G			22		24		24					22		26		
(S)			3		3		2					0		0		
S			4		2		3					9		5		

Quality Figure and Forecast Scale:

1 = Useless
2 = Very poor
3 = Poor
4 = Poor to fair
5 = Fair
6 = Fair to good
7 = Good
8 = Very good
9 = Excellent

Symbols

X = Warning given.
H = Quality 4 or worse on day or half-day following warning.
M = Quality 4 or worse on day or half-day following no warning.
G = Quality 5 or better on day following no warning
(S) = Quality 5 on day following warning.
S = Quality 6 or better on day following warning.
( ) = Quality or forecast 4 or worse (disturbed)

Geomagnetic K_A on the standard scale of 0 to 9, 9 representing the greatest disturbance.

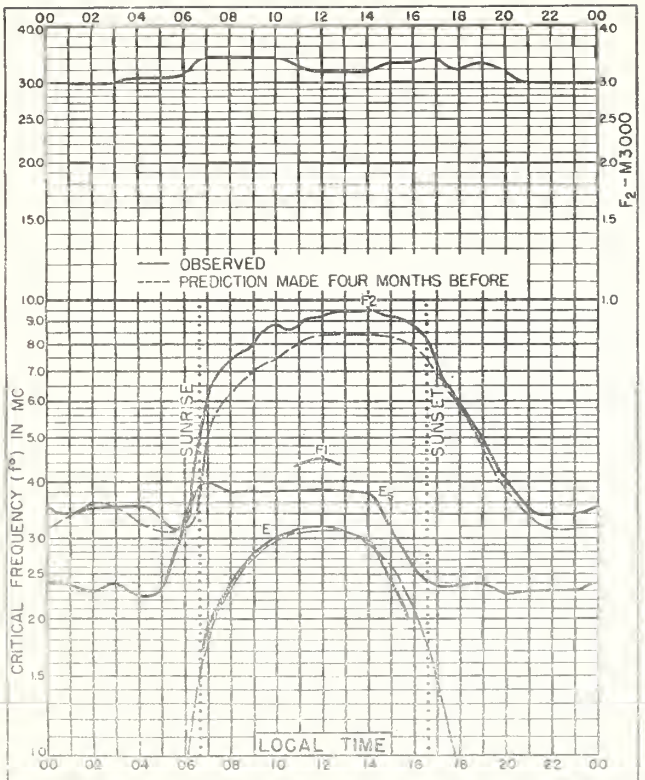

Fig. 1. WASHINGTON, D. C.
39.0°N, 77.5° W NOVEMBER, 1945.

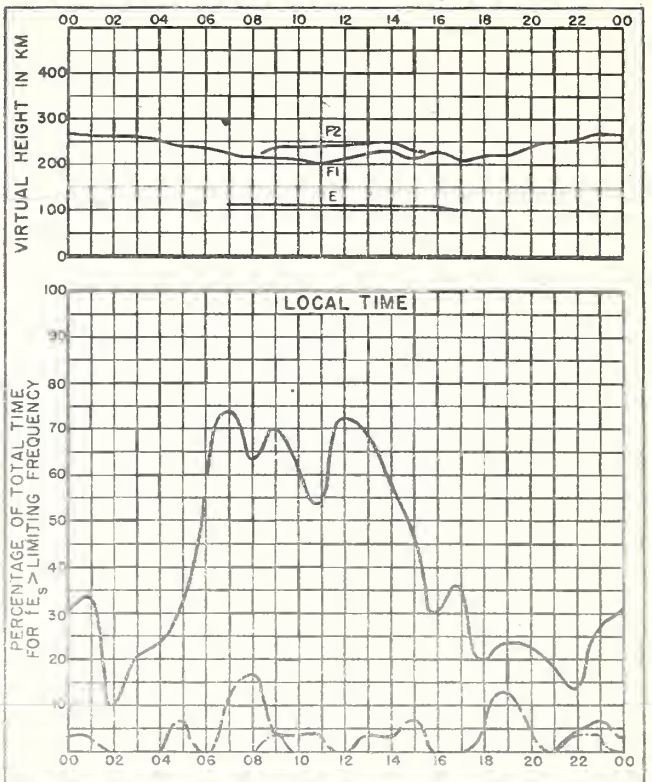

Fig. 2. WASHINGTON, D. C. NOVEMBER, 1945.

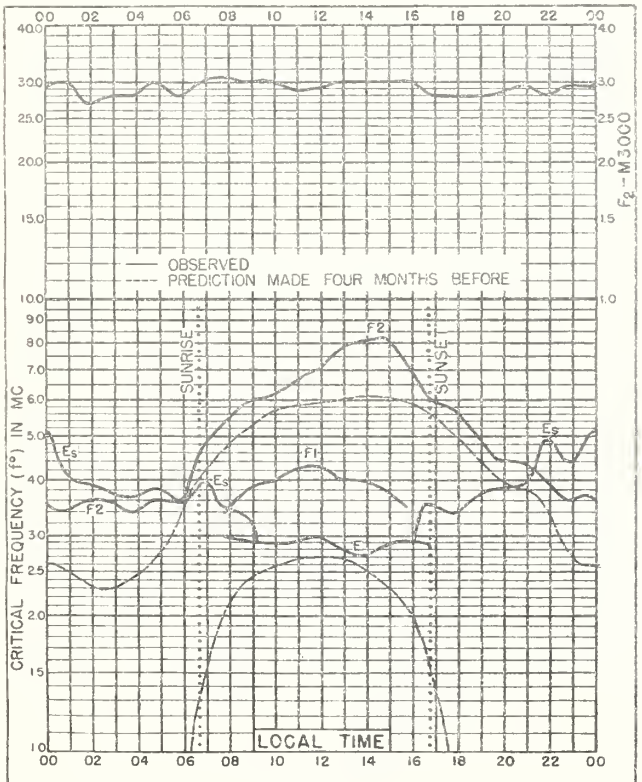

Fig. 3. CHURCHILL, CANADA
58.8°N, 94.2° W OCTOBER, 1945.

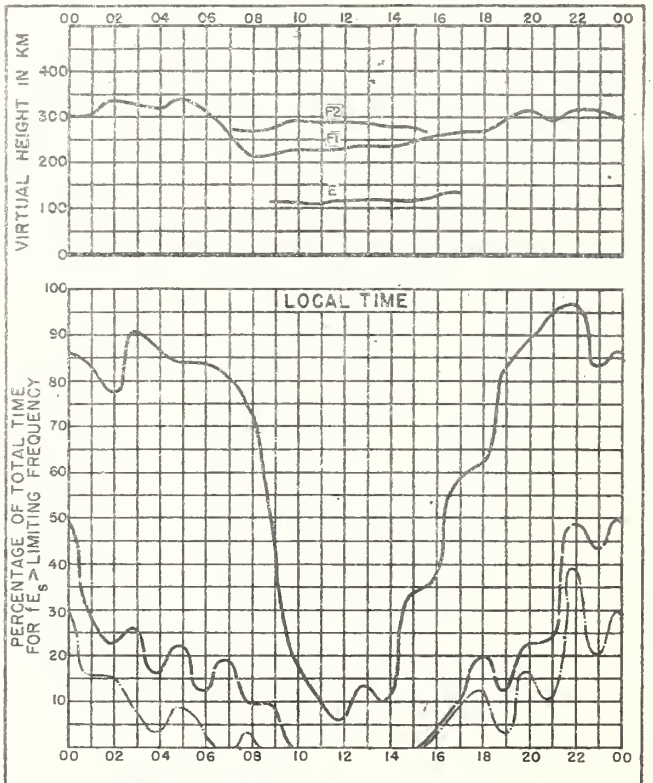

Fig. 4. CHURCHILL, CANADA OCTOBER, 1945.

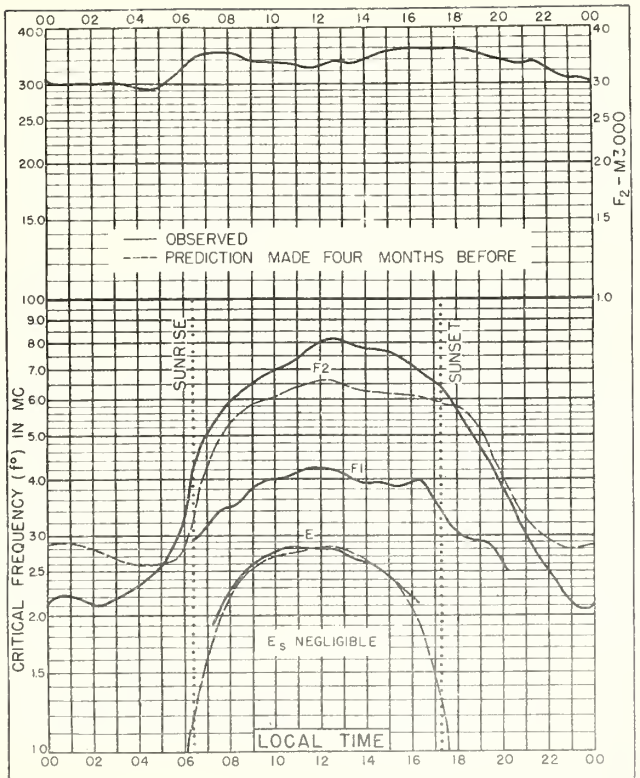

Fig. 5. PRINCE RUPERT, CANADA
54.3° N, 130.3° W OCTOBER, 1945.

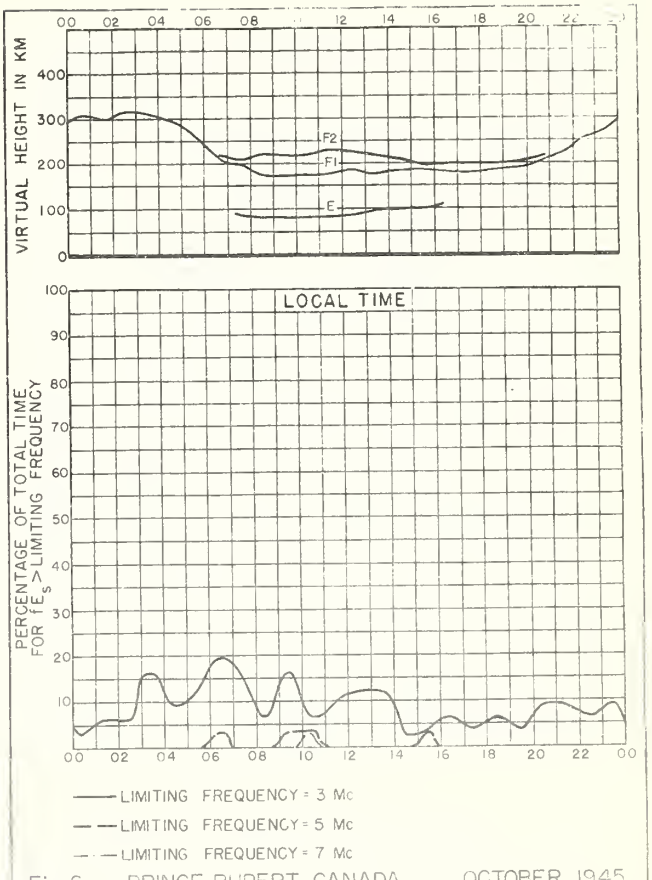

Fig. 6. PRINCE RUPERT, CANADA OCTOBER, 1945.

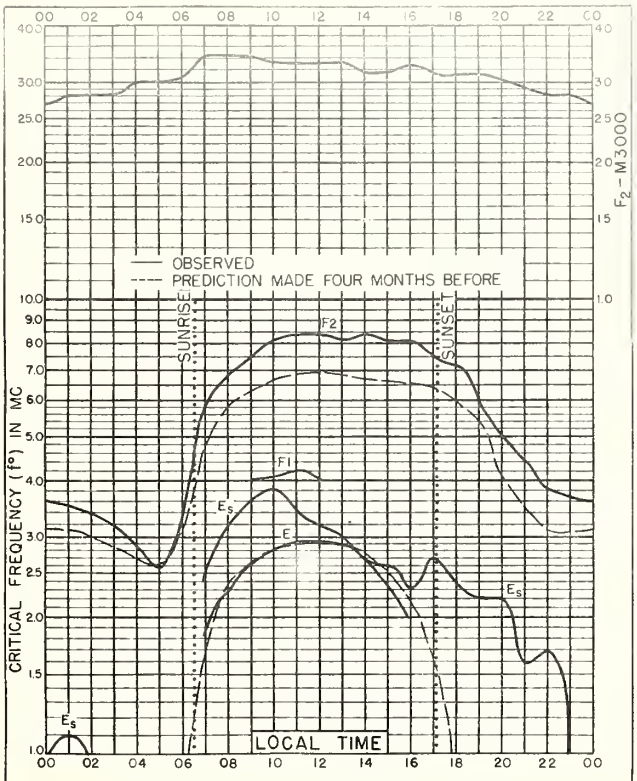

Fig. 7. GREAT BADDOW, ENGLAND
51.7°N, 0.5°E OCTOBER, 1945.

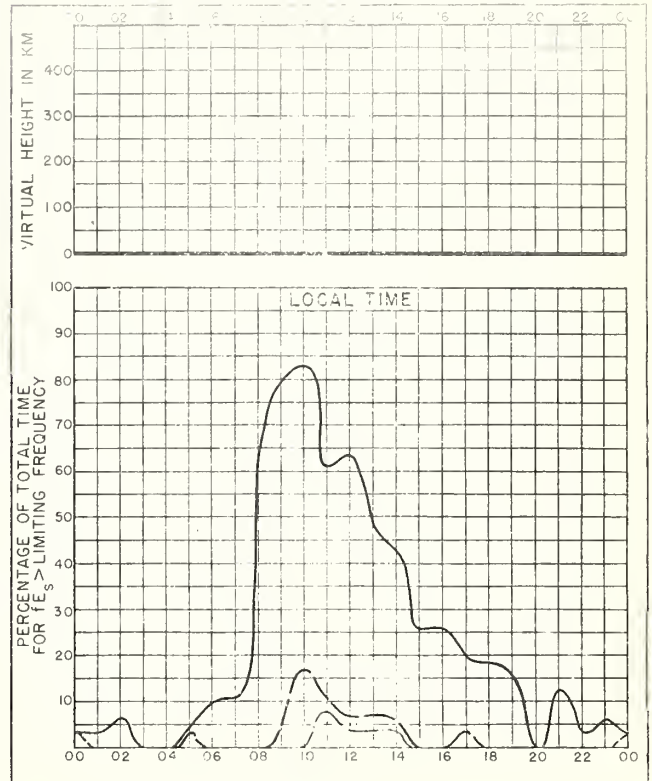

Fig. 8. GREAT BADDOW, ENGLAND OCTOBER, 1945

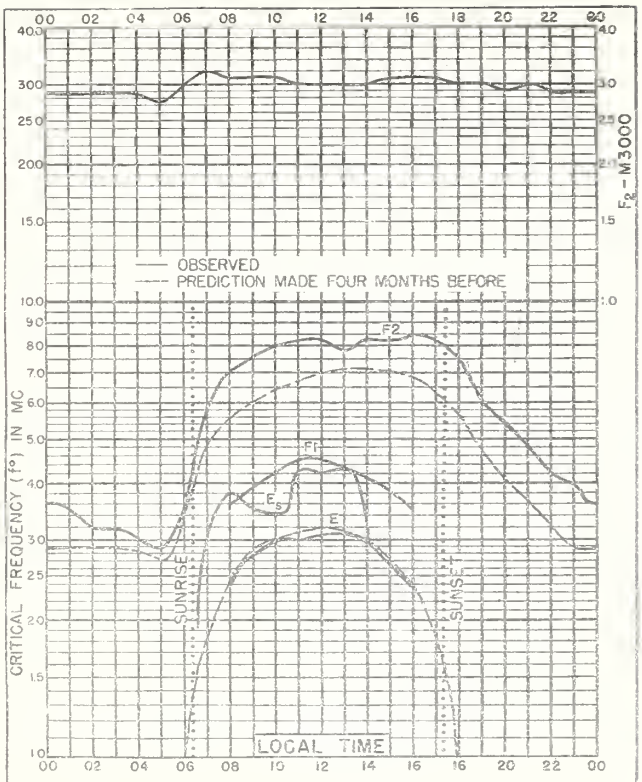

Fig. 9. OTTAWA, CANADA
45.5° N, 75.8° W OCTOBER, 1945.

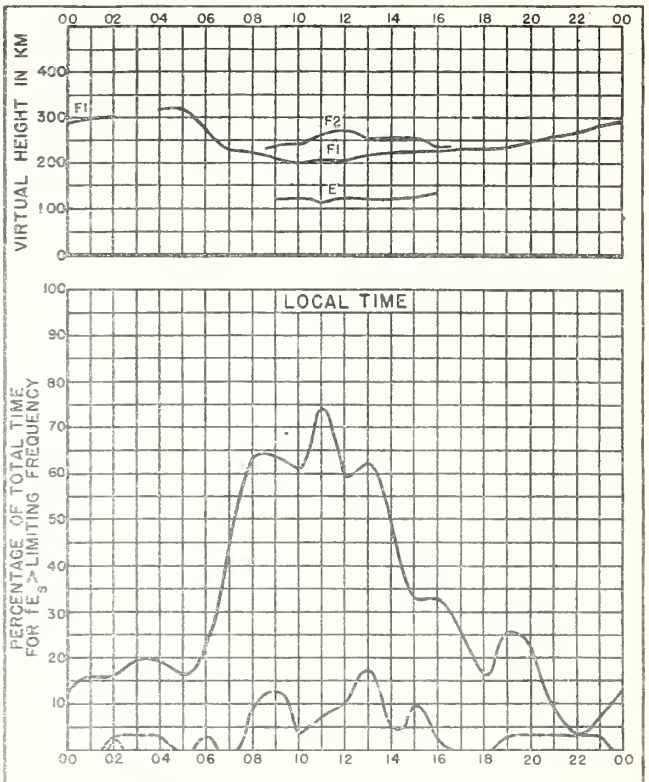

Fig. 10. OTTAWA, CANADA OCTOBER, 1945

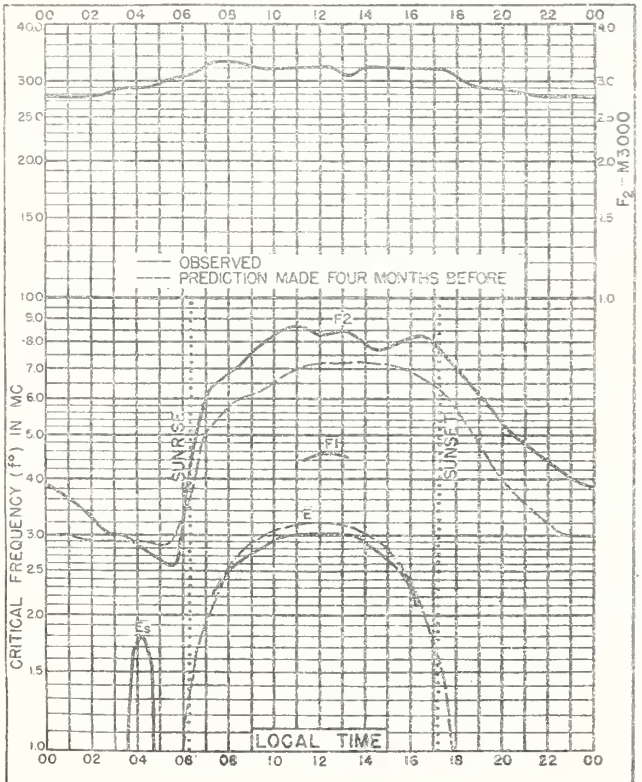

Fig. 11. BOSTON, MASSACHUSETTS
42.4° N, 71.2° W OCTOBER, 1945.

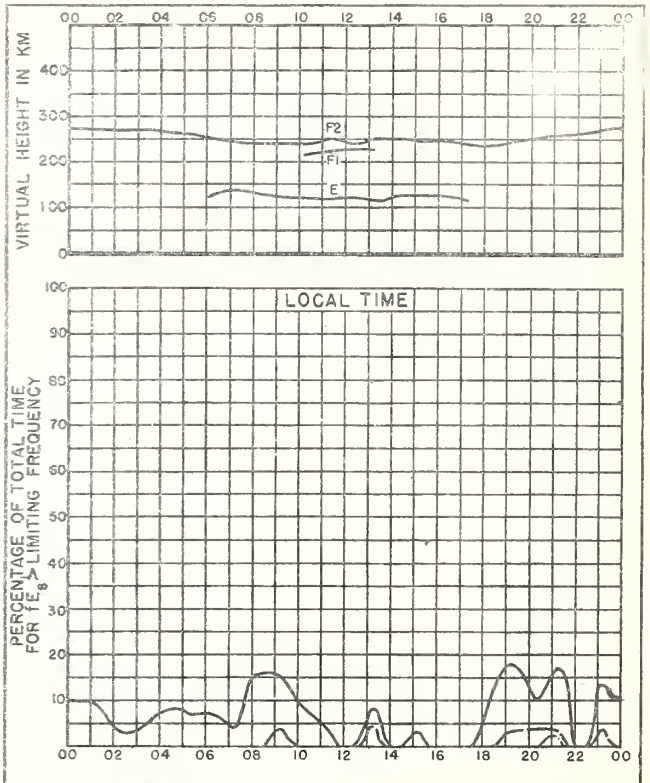

Fig. 12. BOSTON, MASSACHUSETTS OCTOBER, 1945.

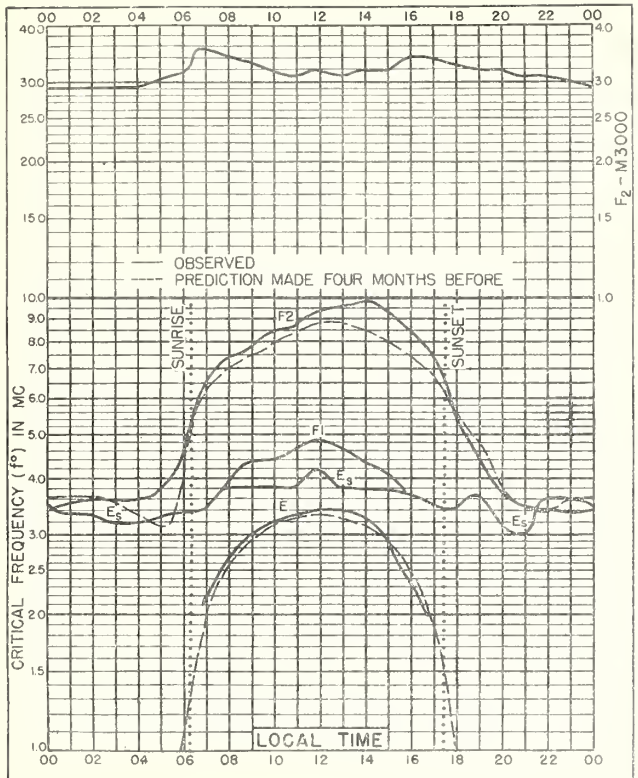

Fig. 13. SAN FRANCISCO, CALIF.
37.4° N, 122.2° W OCTOBER, 1945.

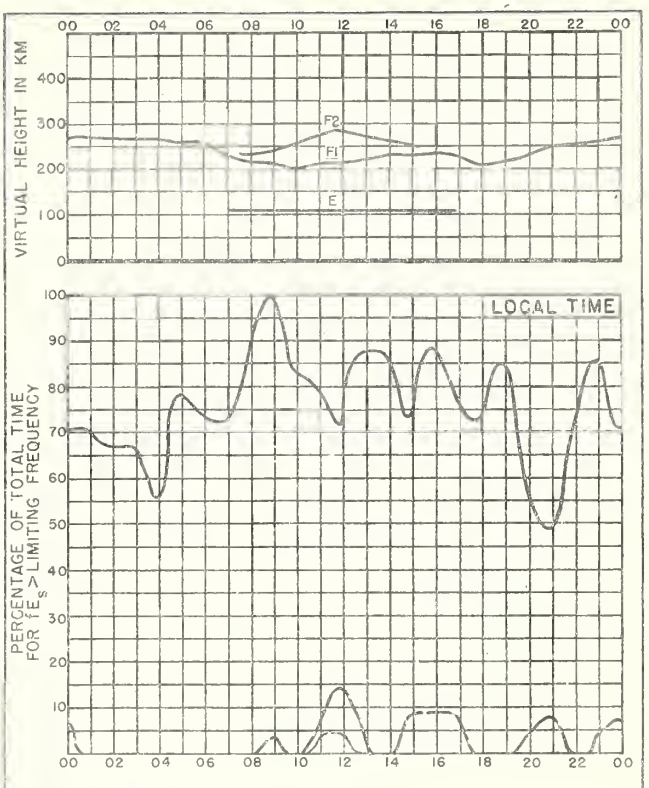

Fig. 14. SAN FRANCISCO, CALIF. OCTOBER, 1945.

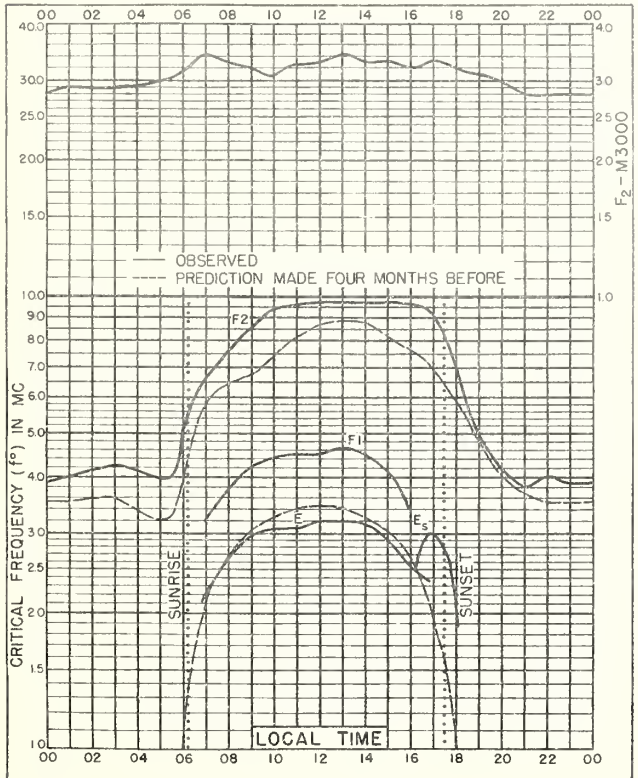

Fig. 15. BATON ROUGE, LOUISIANA
30.5° N, 91.2° W OCTOBER, 1945.

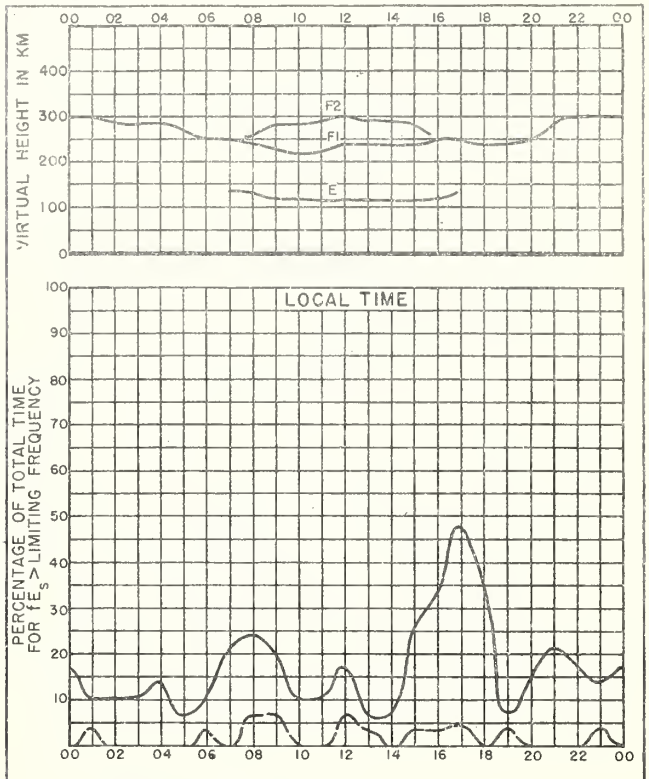

Fig. 16. BATON ROUGE, LOUISIANA OCTOBER, 1945.

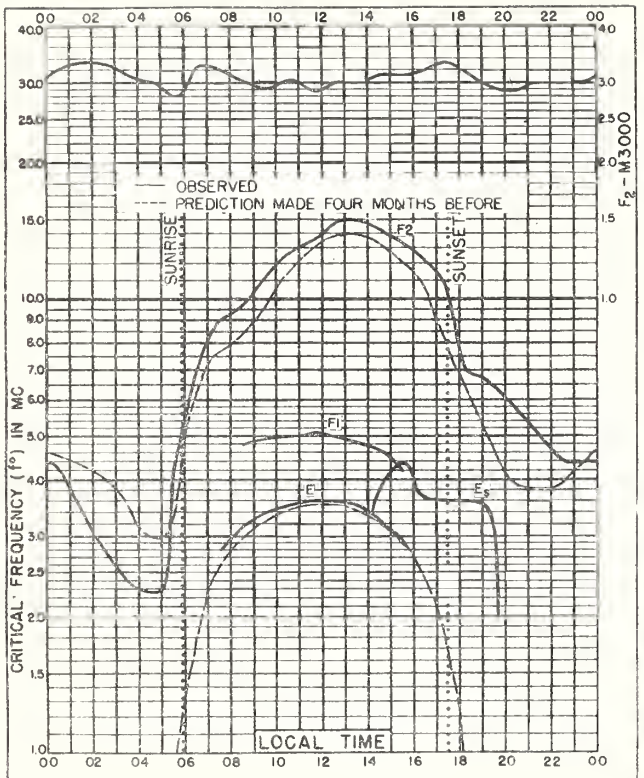

Fig. 17. MAUI, HAWAII
20.8° N, 156.5° W OCTOBER, 1945.

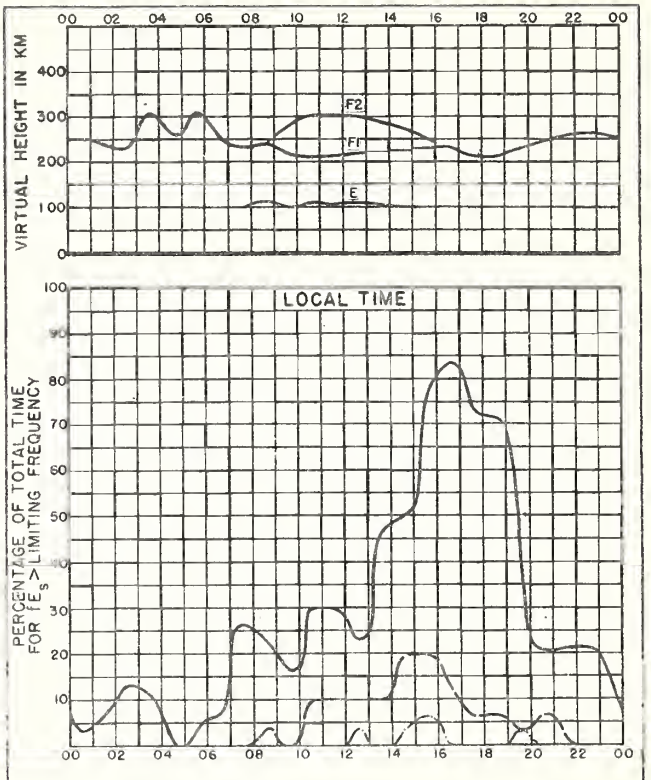

Fig. 18. MAUI, HAWAII OCTOBER, 1945.

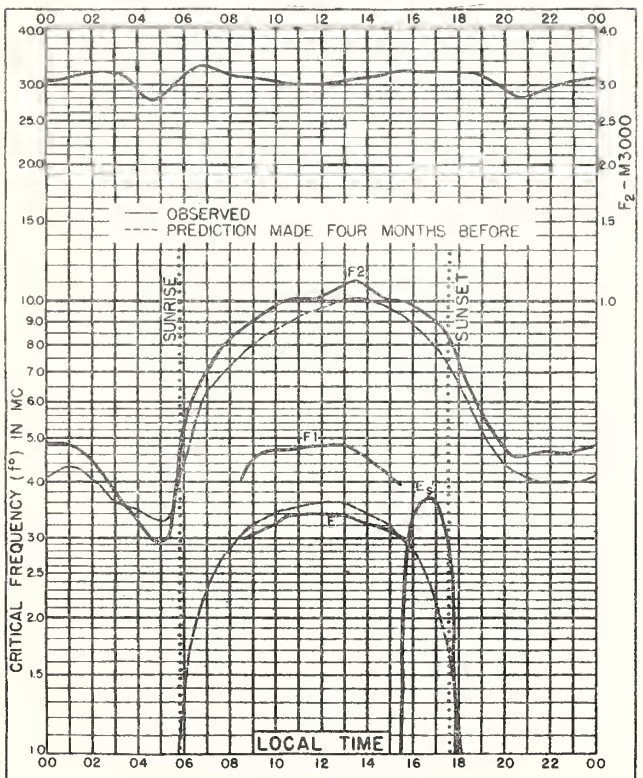

Fig. 19. SAN JUAN, PUERTO RICO
18.4° N, 66.1° W OCTOBER, 1945.

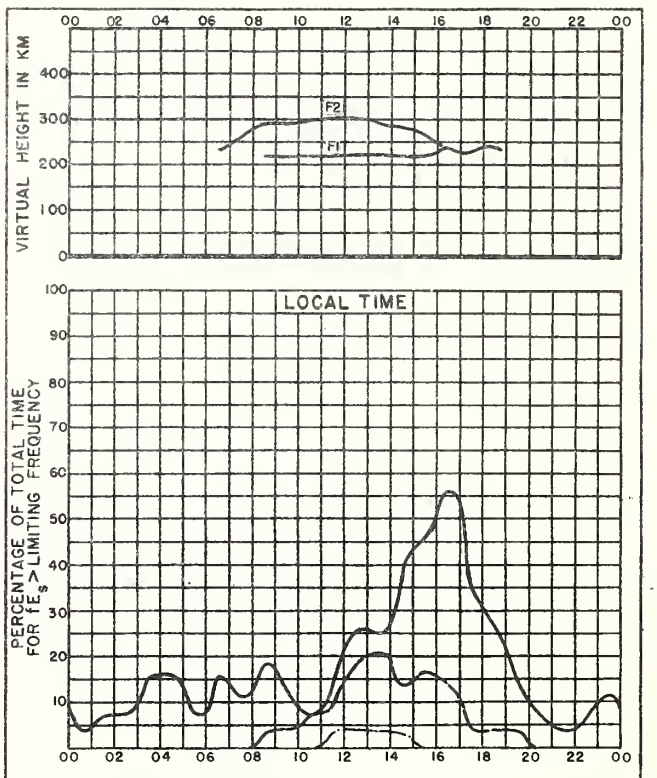

Fig. 20. SAN JUAN, PUERTO RICO OCTOBER, 1945.

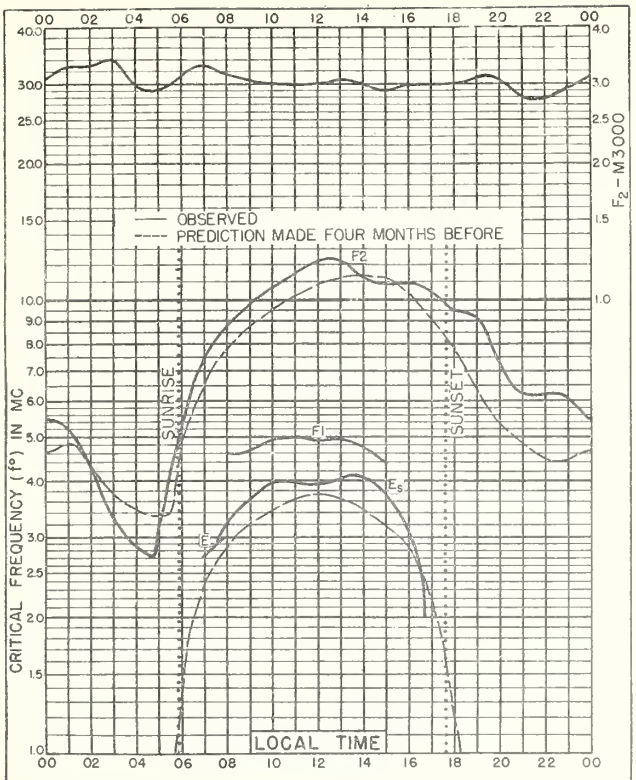

Fig. 21. TRINIDAD, BRIT. WEST INDIES
10.6° N, 61.2° W OCTOBER, 1945.

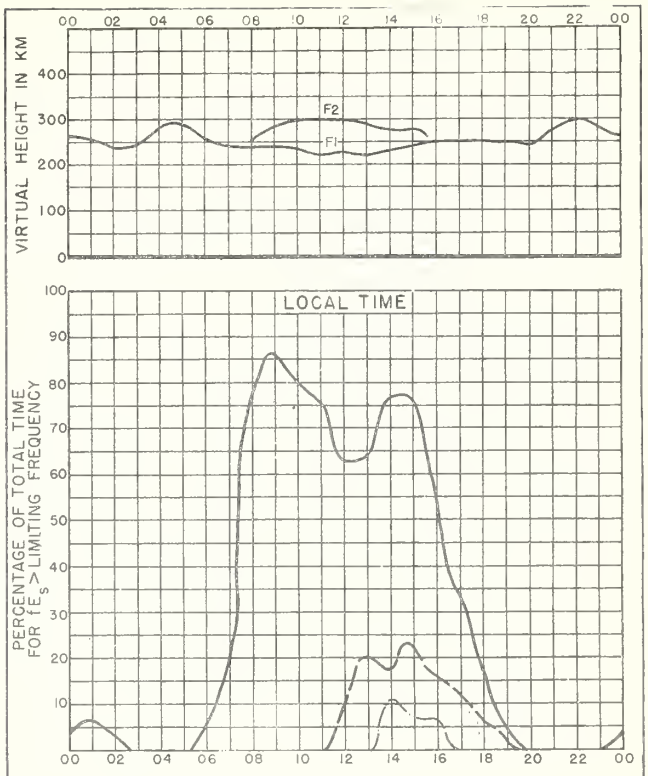

Fig. 22. TRINIDAD, BRIT. WEST INDIES OCTOBER, 1945.

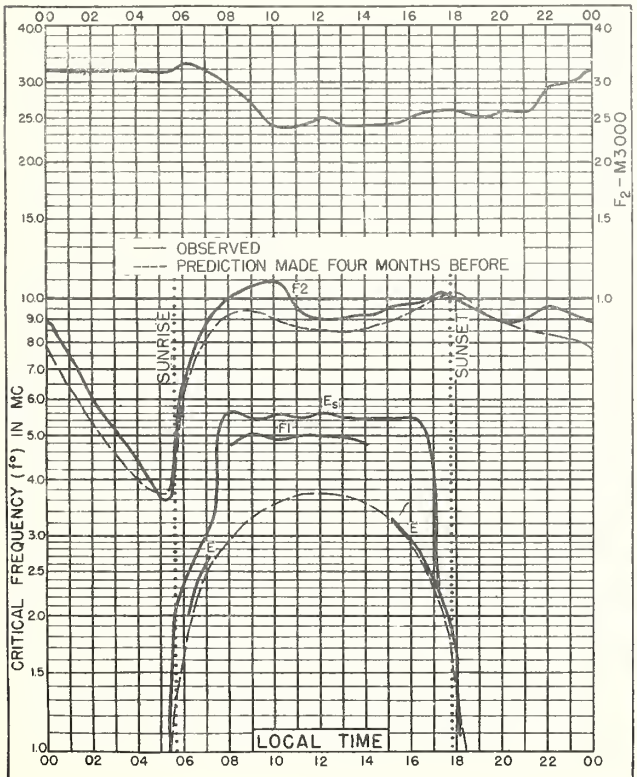

Fig. 23. HUANCAYO, PERU
12.0° S, 75.3° W OCTOBER, 1945.

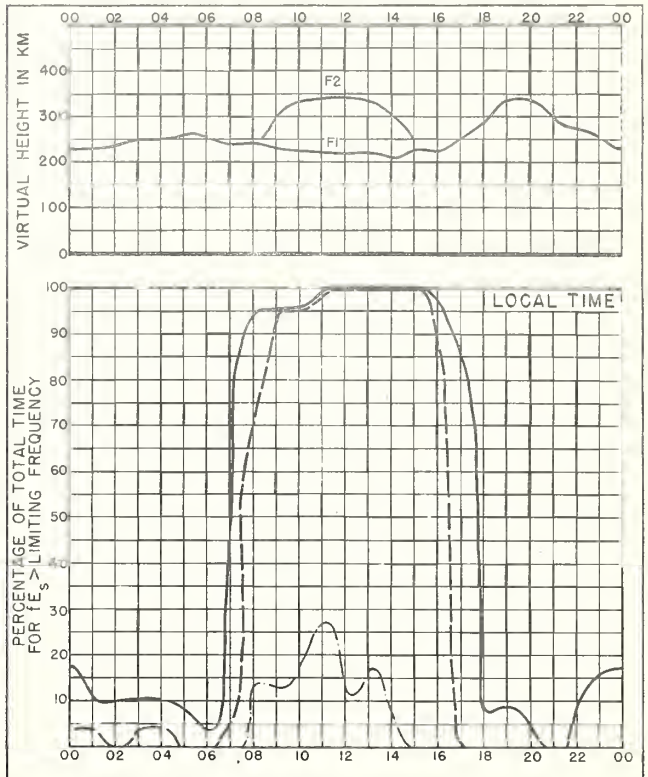

Fig. 24. HUANCAYO, PERU OCTOBER, 1945.

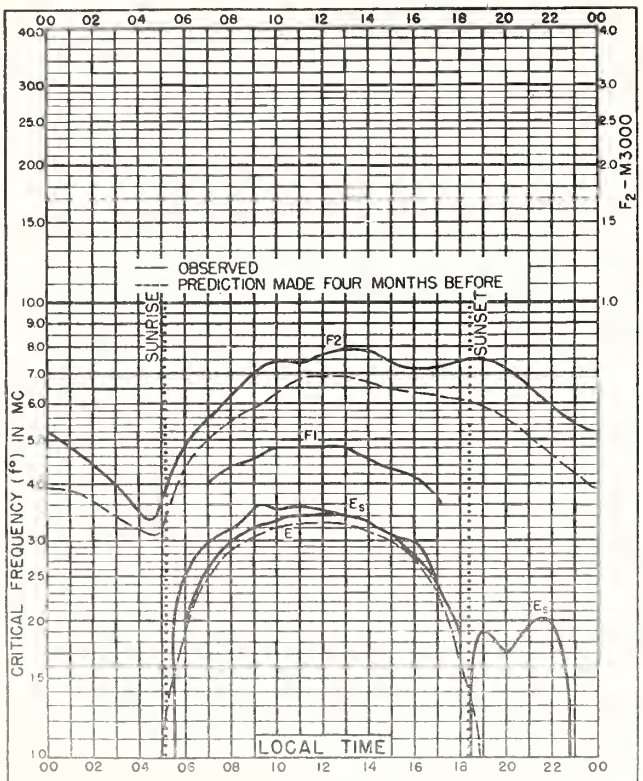

Fig. 25. CHRISTCHURCH, N.Z.
43.5°S, 172.6°E
OCTOBER, 1945.

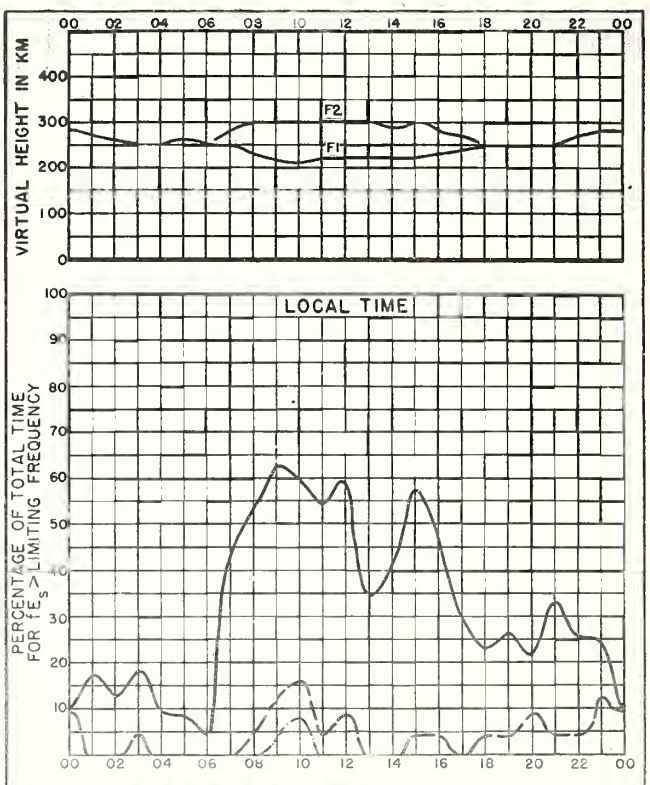

Fig. 26. CHRISTCHURCH, N.Z. OCTOBER, 1945.

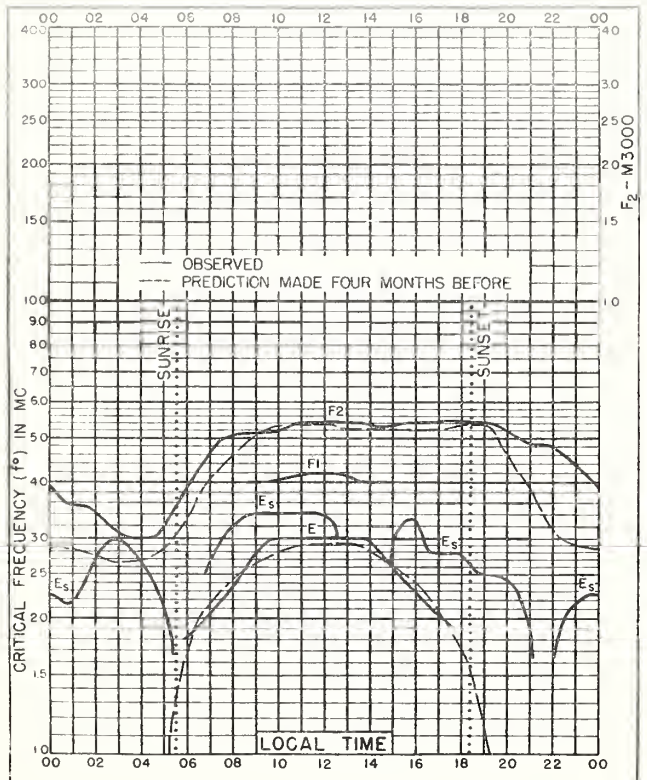

Fig 27. OSLO, NORWAY
59.9°N, 11.0°E
SEPTEMBER, 1945.

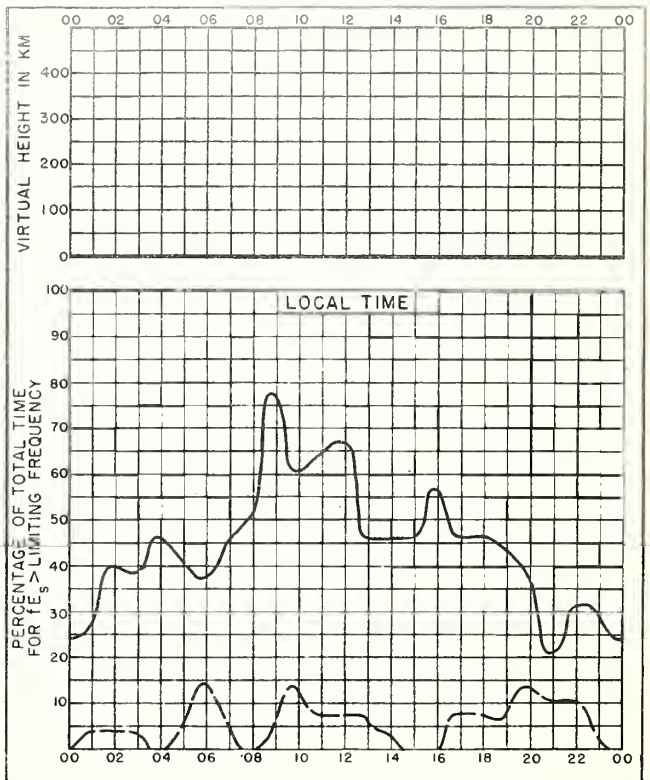

Fig. 28. OSLO, NORWAY SEPTEMBER, 1945.

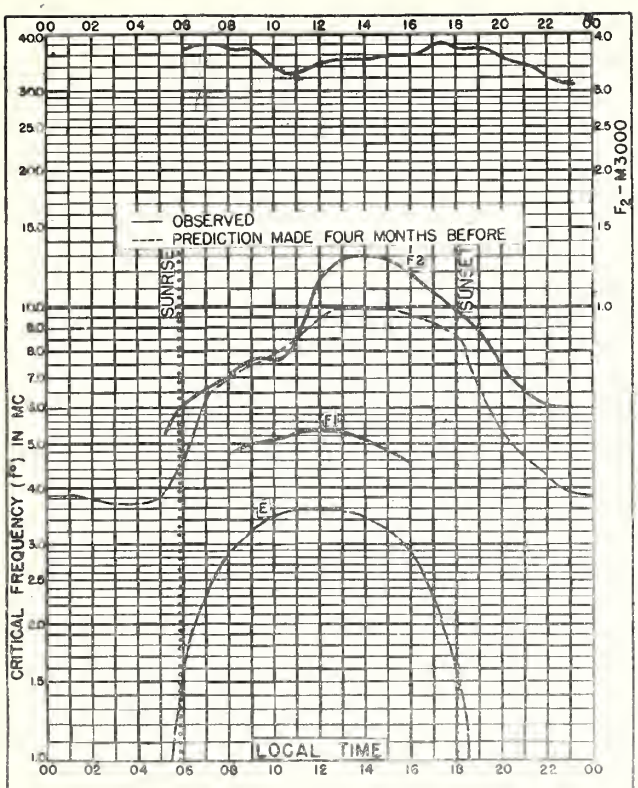

Fig. 29. CHUNGKING, CHINA
29.4°N, 106.8°E SEPTEMBER, 1945.

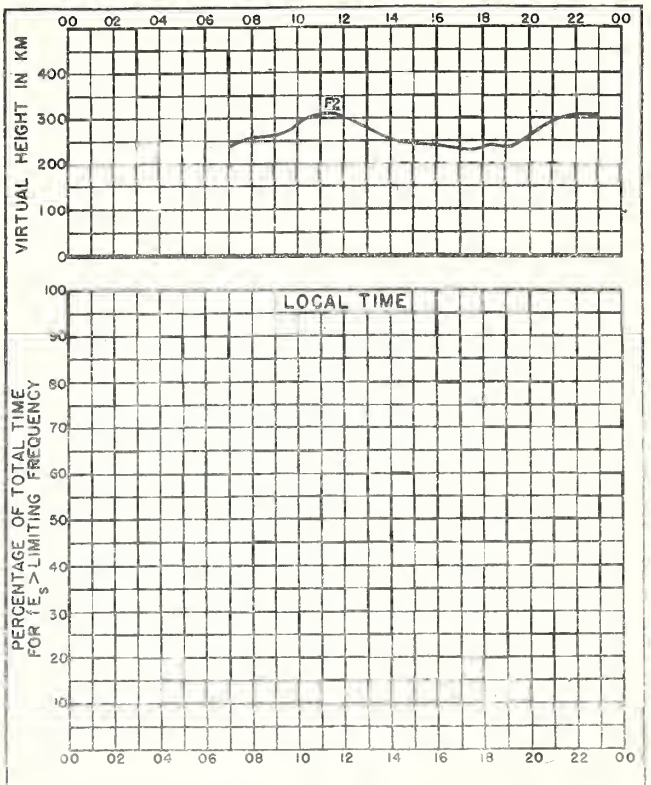

Fig. 30. CHUNGKING, CHINA SEPTEMBER, 1945.

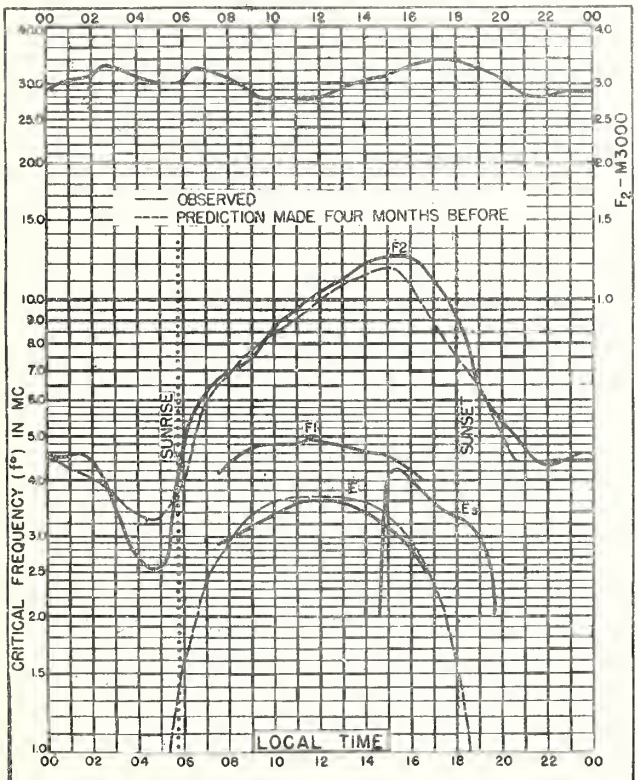

Fig. 31. MAUI, HAWAII
20.8°N, 156.5°W SEPTEMBER, 1945.

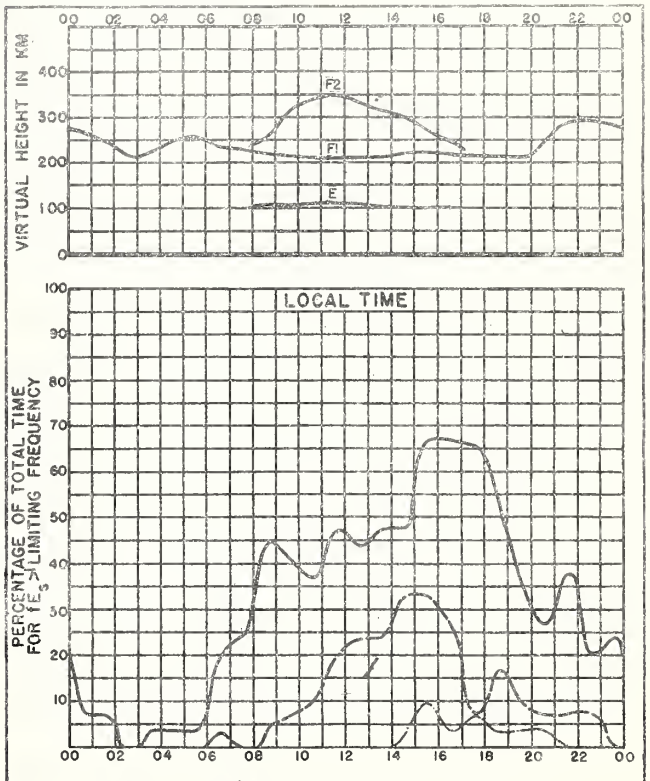

Fig. 32. MAUI, HAWAII SEPTEMBER, 1945.

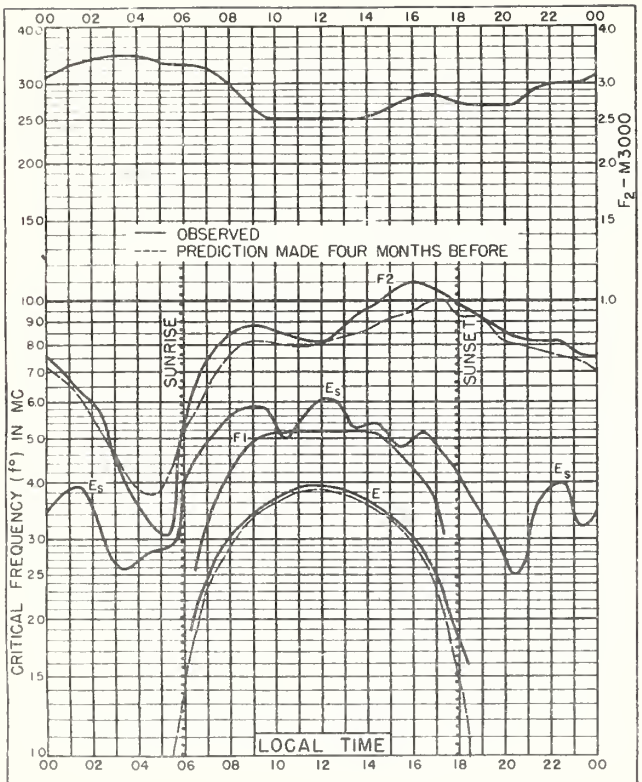

Fig. 33. LEYTE, PHILIPPINE IS.
11.0°N, 125.0°E SEPTEMBER, 1945.

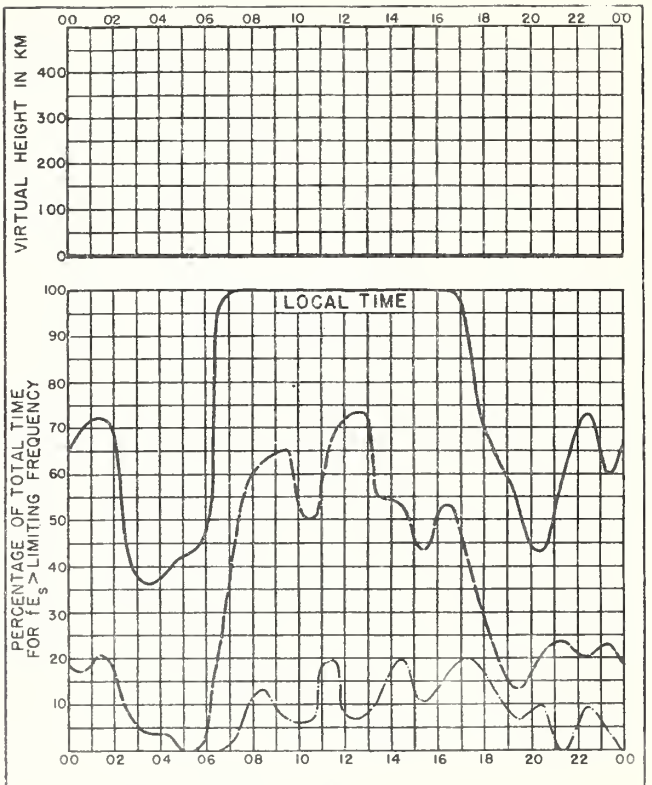

Fig. 34. LEYTE, PHILIPPINE IS. SEPTEMBER, 1945.

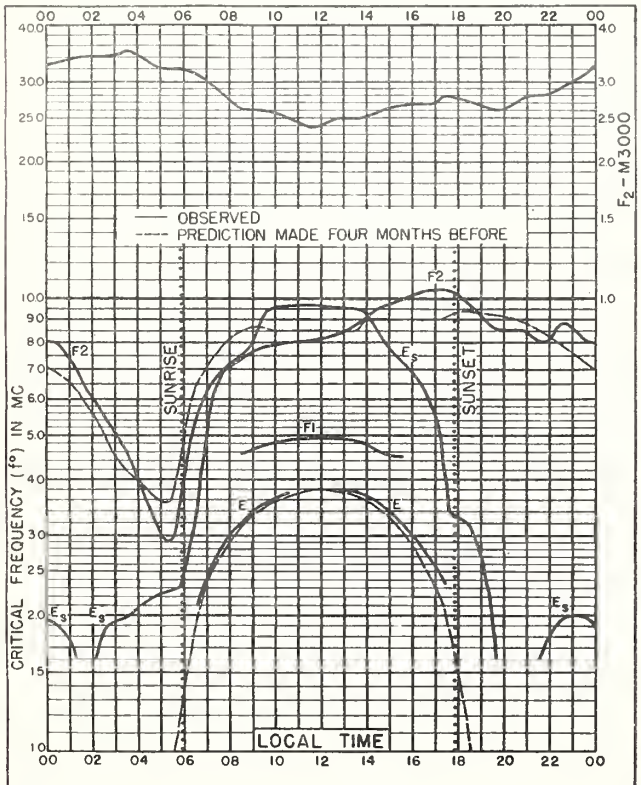

Fig. 35. CHRISTMAS I.
1.9°N, 157.3°W SEPTEMBER, 1945.

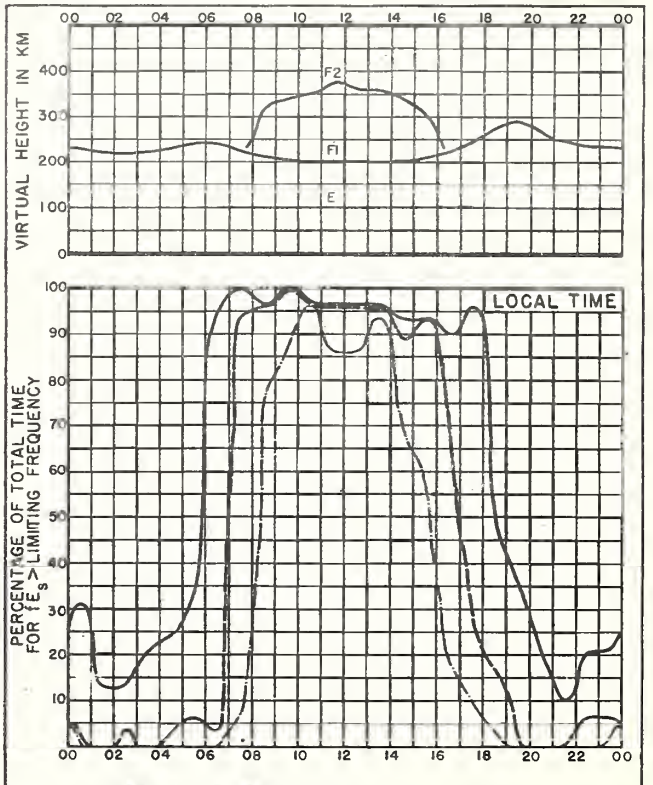

Fig. 36. CHRISTMAS I. SEPTEMBER, 1945.

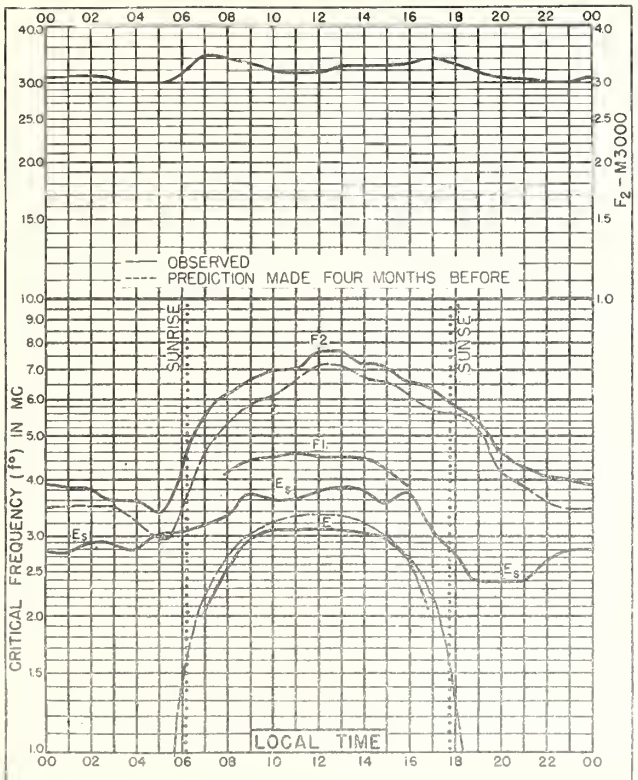

Fig. 37. WATHEROO, W. AUSTRALIA
30.3° S, 115.9° E SEPTEMBER, 1945.

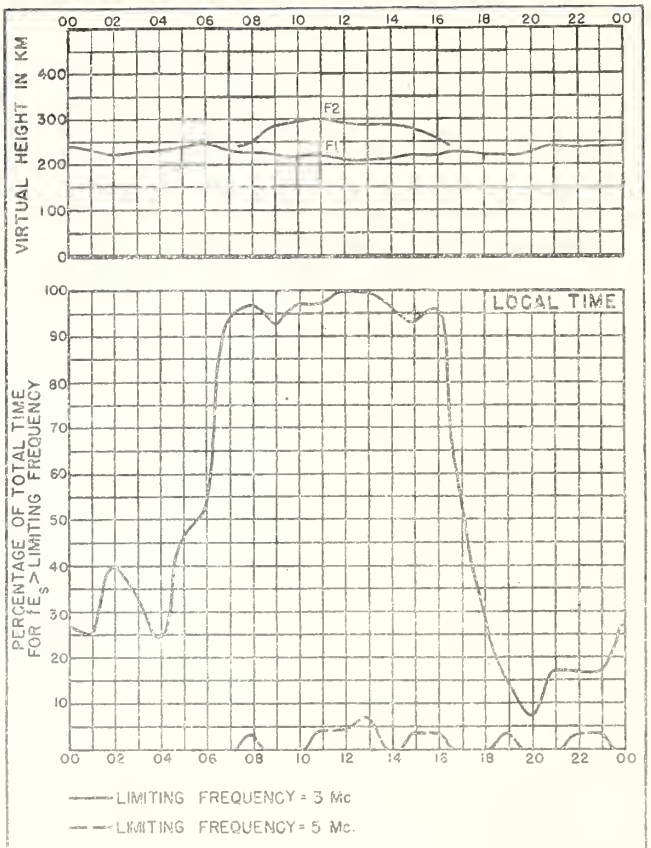

Fig. 38 WATHEROO, W. AUSTRALIA SEPTEMBER, 1945.

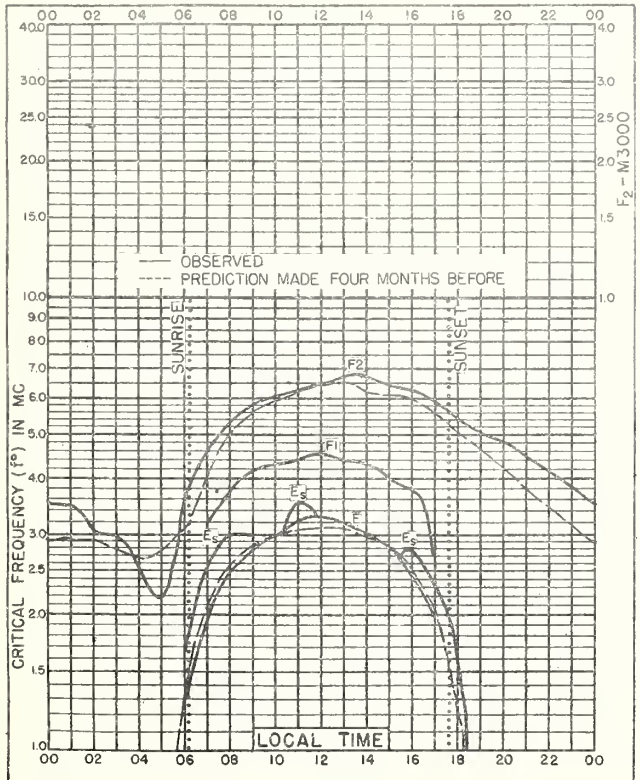

Fig. 39. CHRISTCHURCH, N.Z.
43.5° S, 172.6° E SEPTEMBER, 1945.

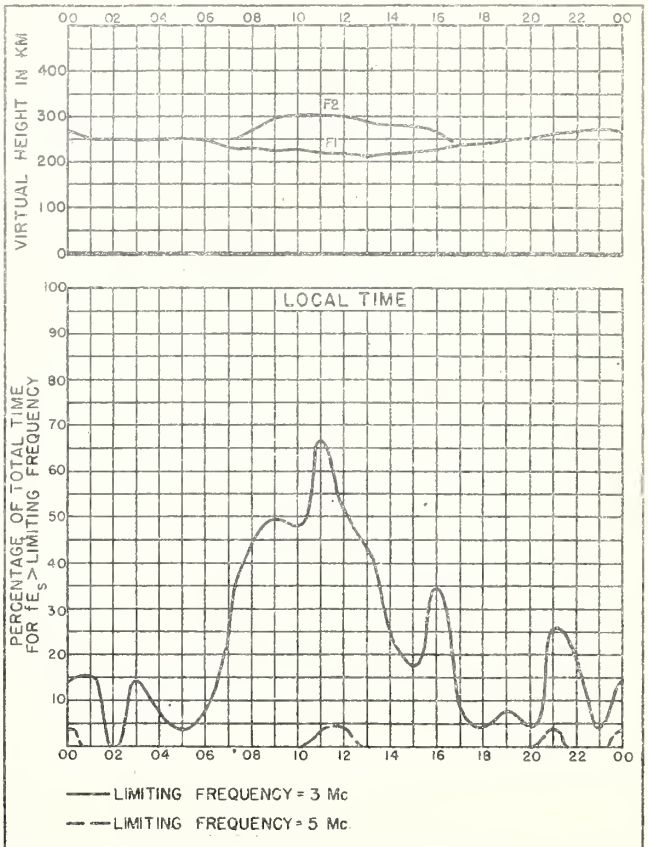

Fig. 40. CHRISTCHURCH, N.Z. SEPTEMBER, 1945.

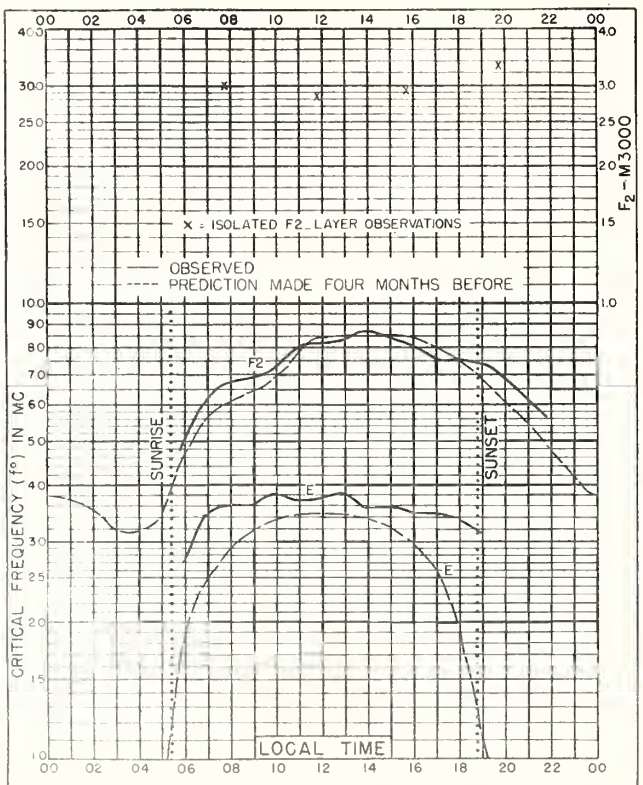

Fig. 41. PESHAWAR, INDIA
34.0° N, 71.5° E AUGUST, 1945.

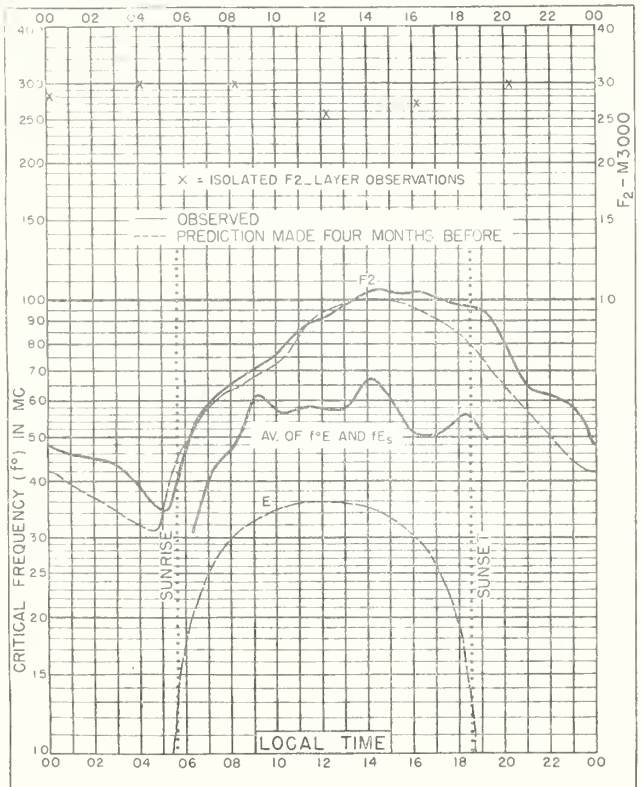

Fig. 42. DELHI, INDIA
28.6° N, 77.2° E AUGUST, 1945.

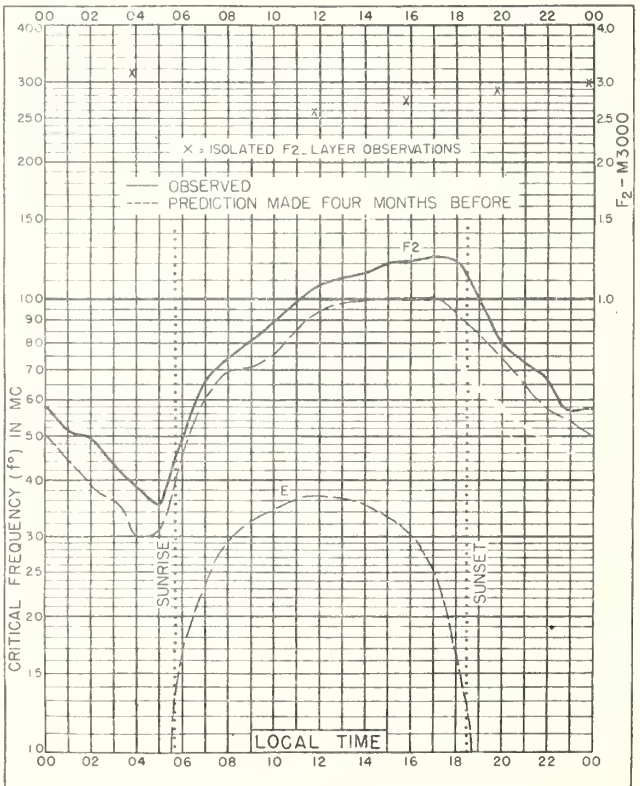

Fig. 43. BOMBAY, INDIA
19.0° N, 73.0° E AUGUST, 1945.

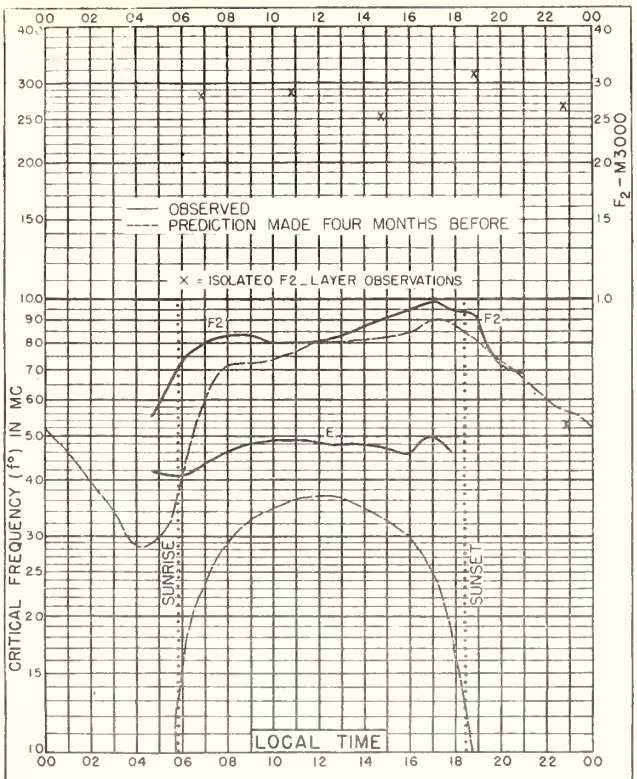

Fig. 44. MADRAS, INDIA
13.0° N, 80.2° E AUGUST, 1945.

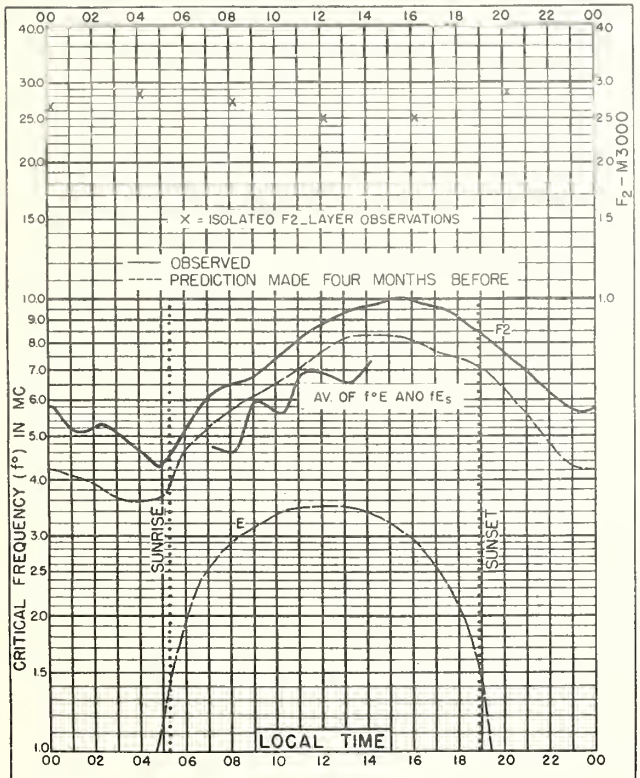

Fig. 45. DELHI, INDIA
28.6° N, 77.2° E JULY, 1945

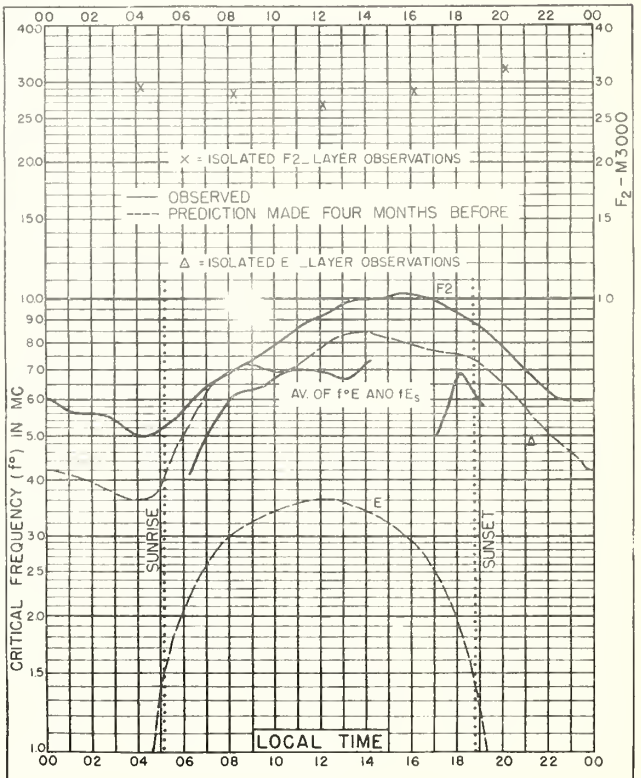

Fig. 46. DELHI, INDIA
28.6° N, 77.2° E JUNE, 1945.

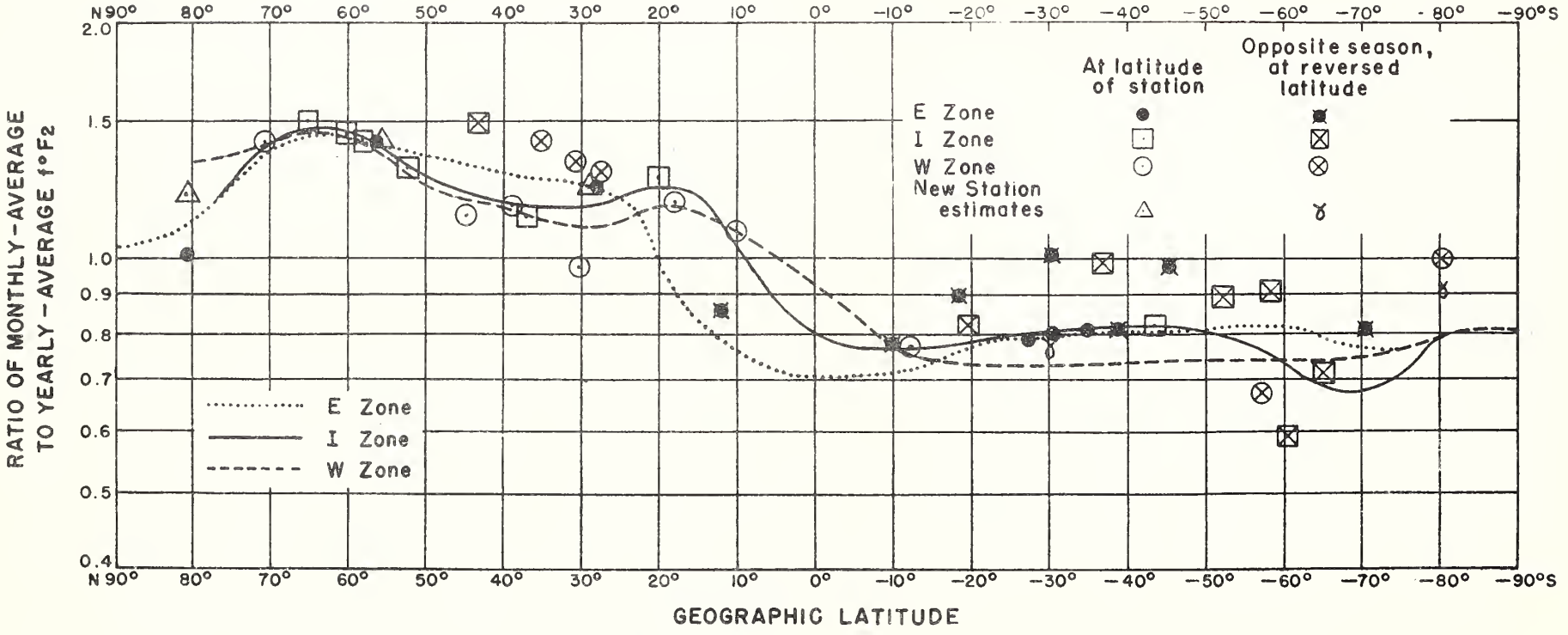

Fig. 47. VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, WITH LATITUDE, 0000 LOCAL TIME, JUNE.

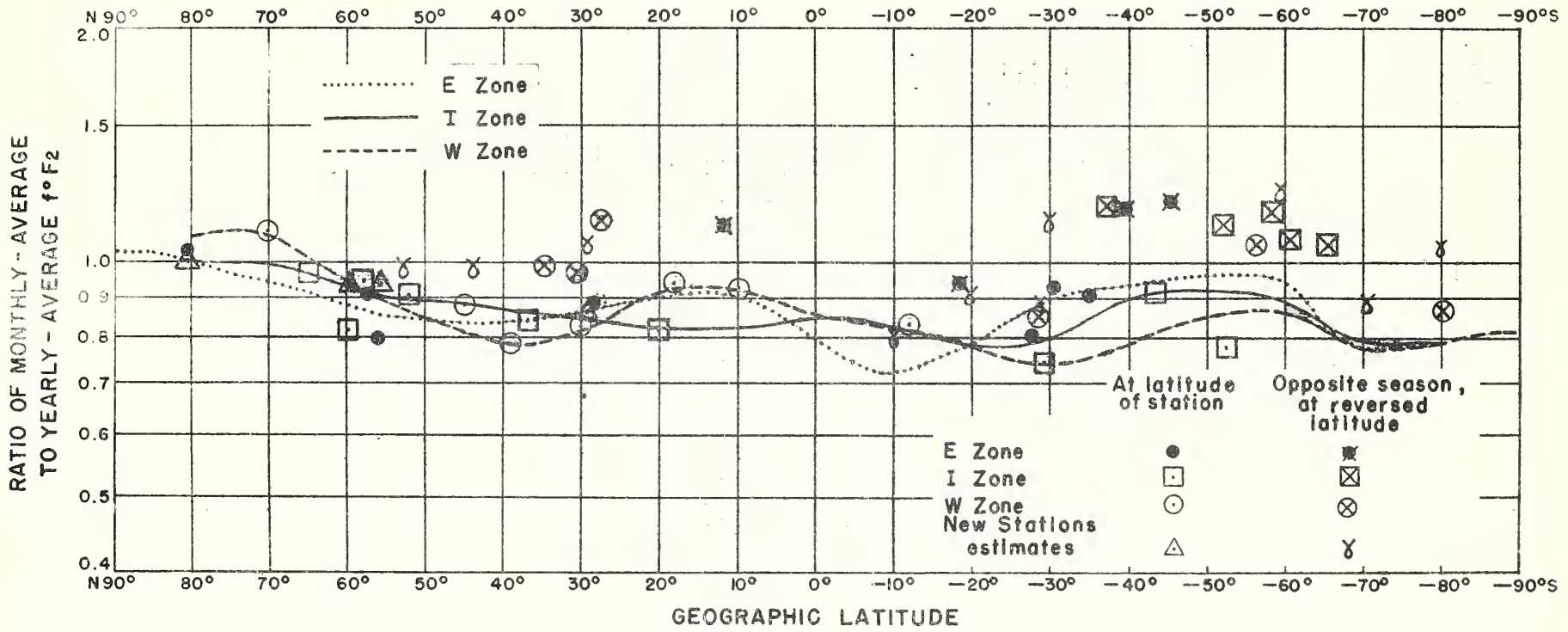

Fig. 48. VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, WITH LATITUDE, 1200 LOCAL TIME, JUNE.

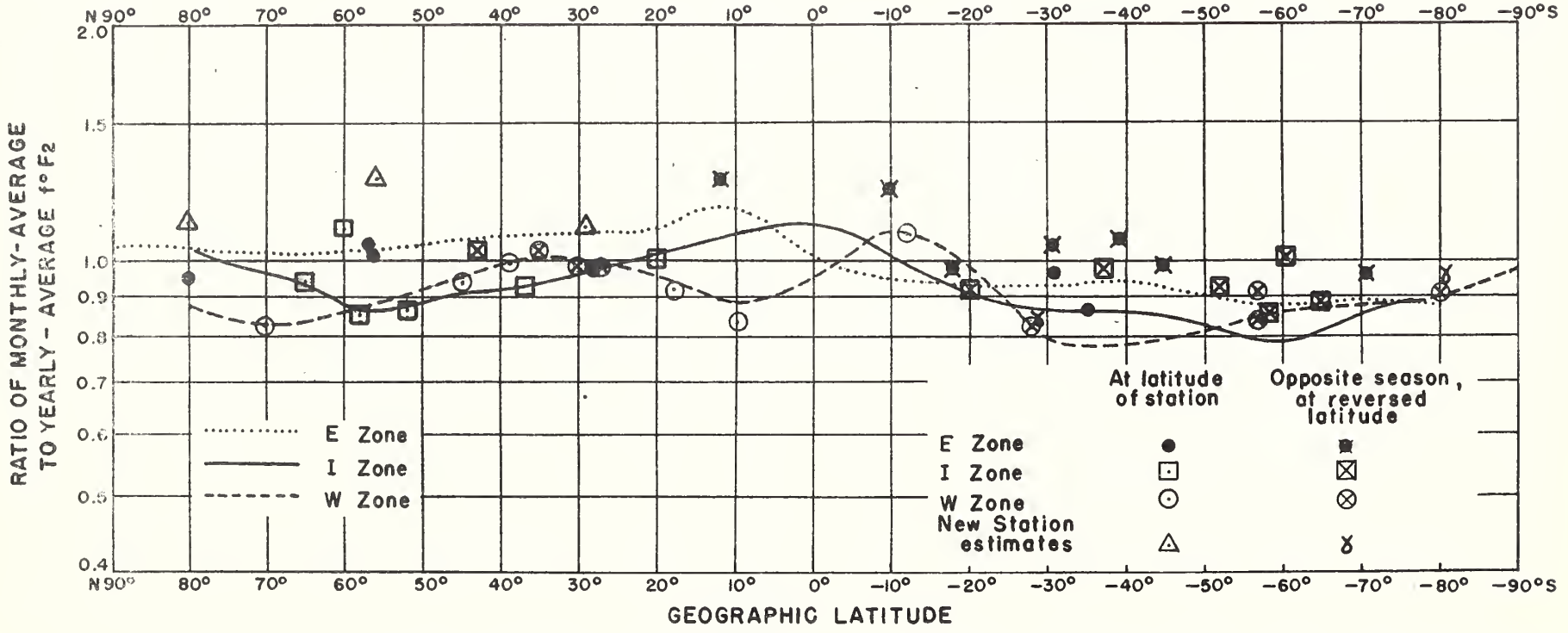

Fig. 49. VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, WITH LATITUDE, 0000 LOCAL TIME, SEPTEMBER.

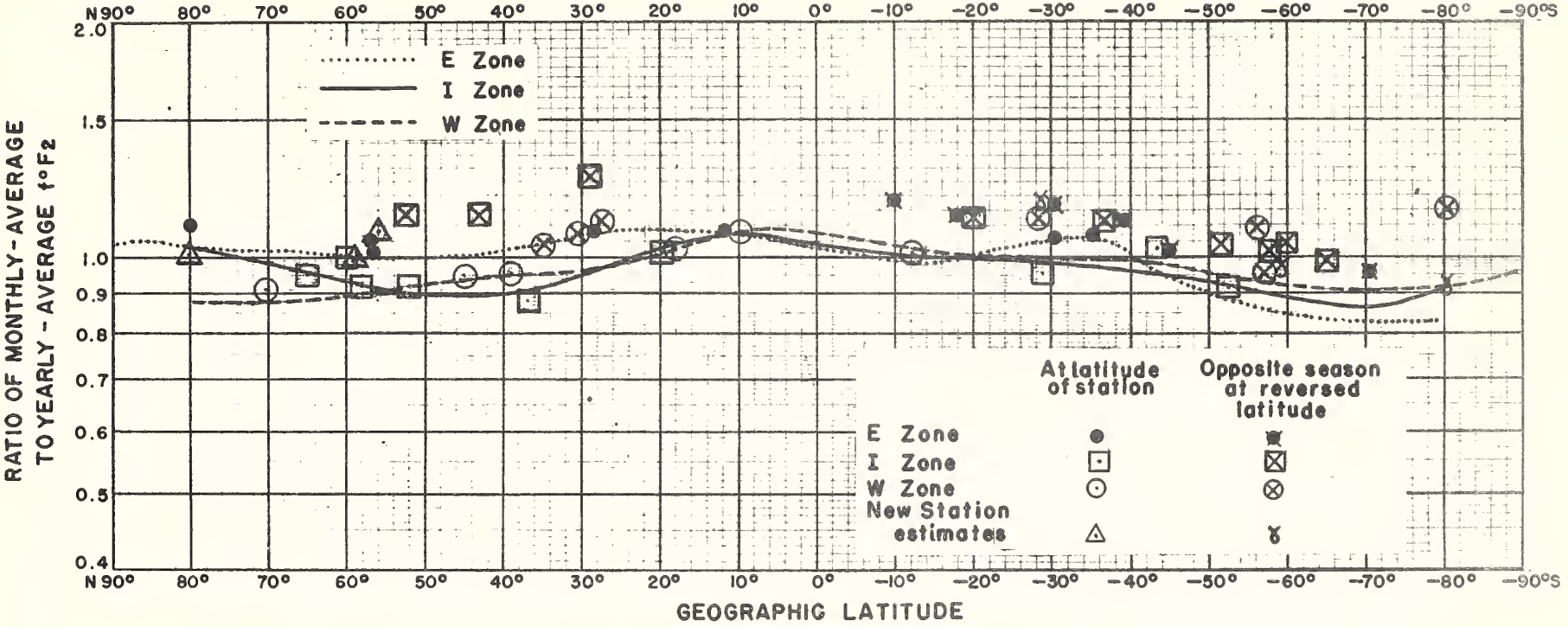

Fig. 50. VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE $f^{\circ}F_2$, WITH LATITUDE, 1200 LOCAL TIME, SEPTEMBER.

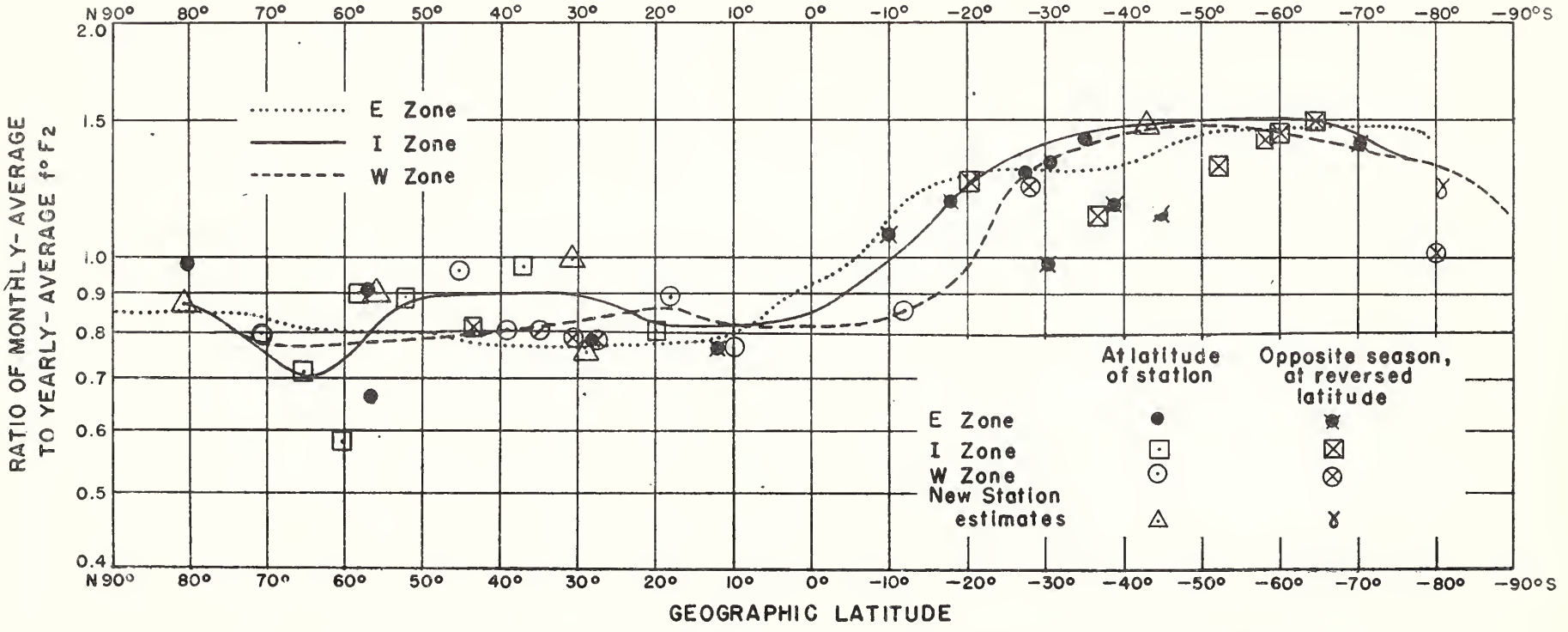

Fig. 51. VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, WITH LATITUDE, 0000 LOCAL TIME, DECEMBER.

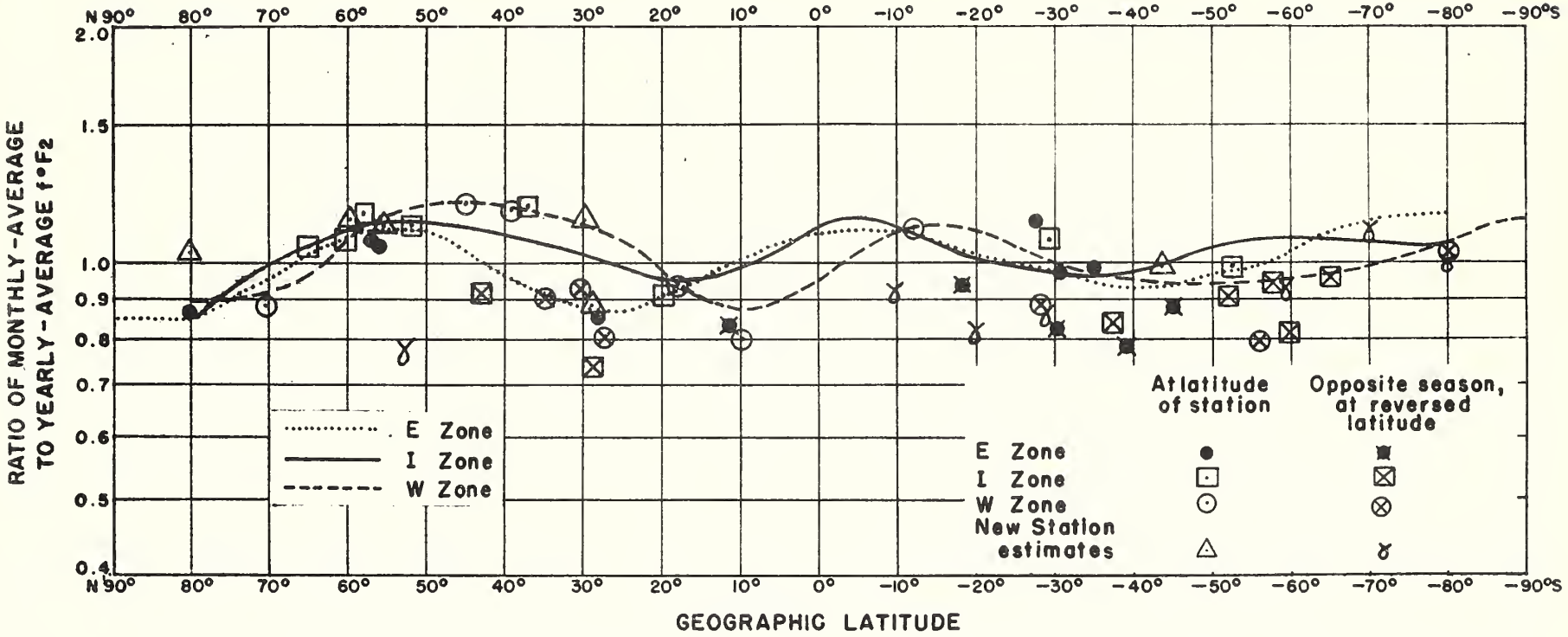

Fig. 52. VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, WITH LATITUDE, 1200 LOCAL TIME, DECEMBER.

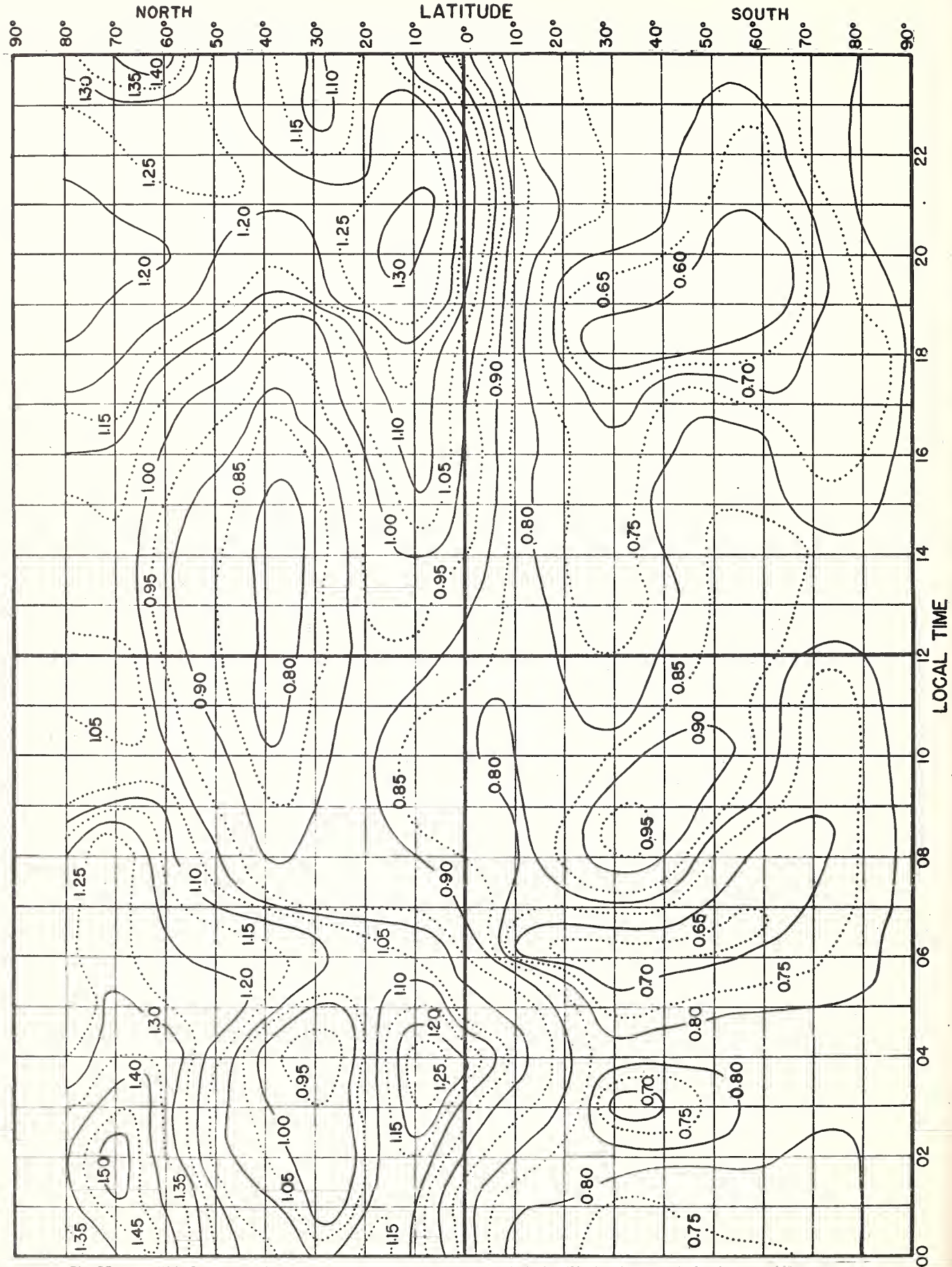

Fig. 53. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, W ZONE, JUNE.

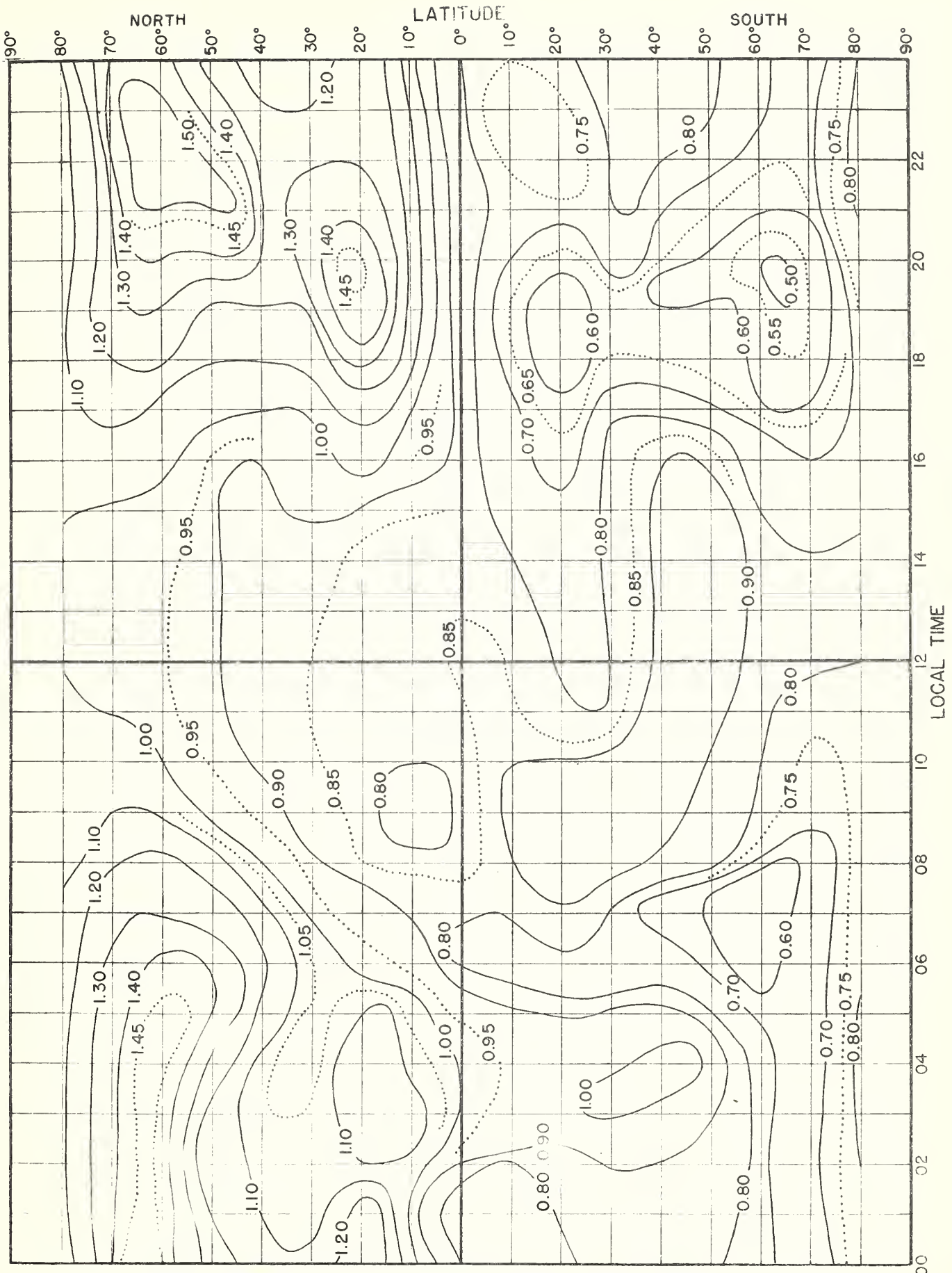

Fig. 54. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f^0F_2, 1 ZONE, JUNE.

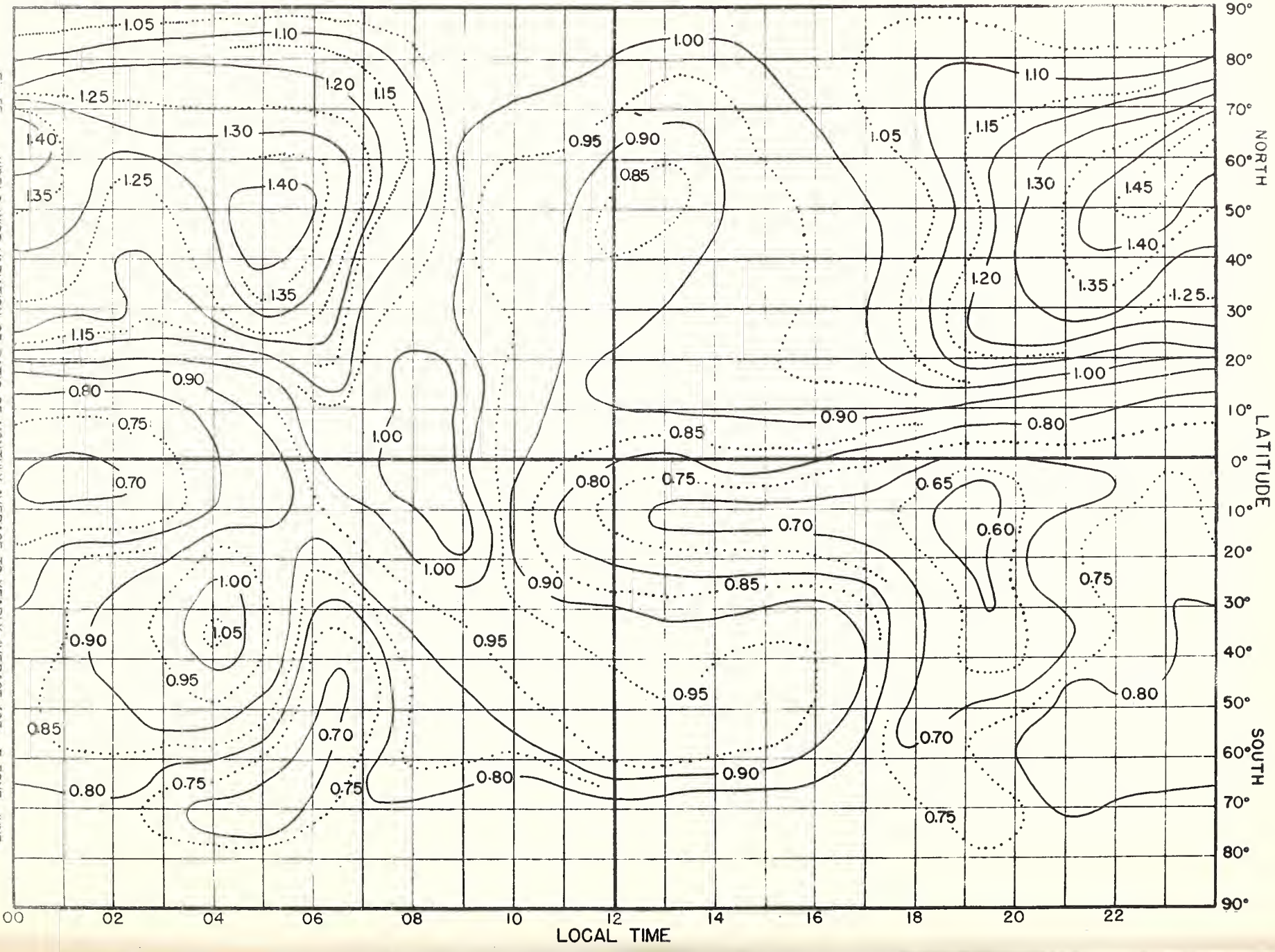

Fig 55. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f^0F_2, E ZONE, JUNE.

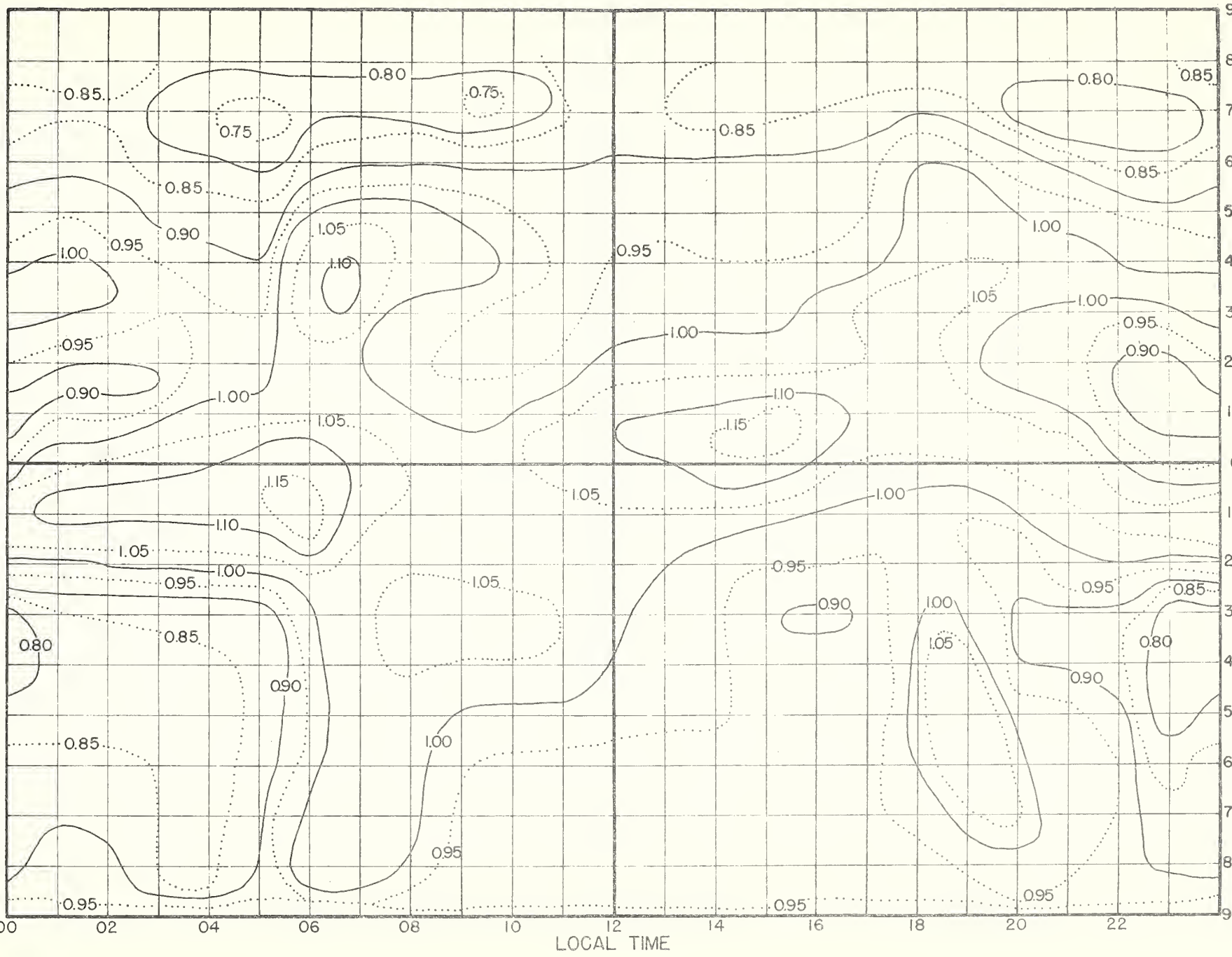

Fig. 56. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f^0F_2, W ZONE, SEPTEMBER.

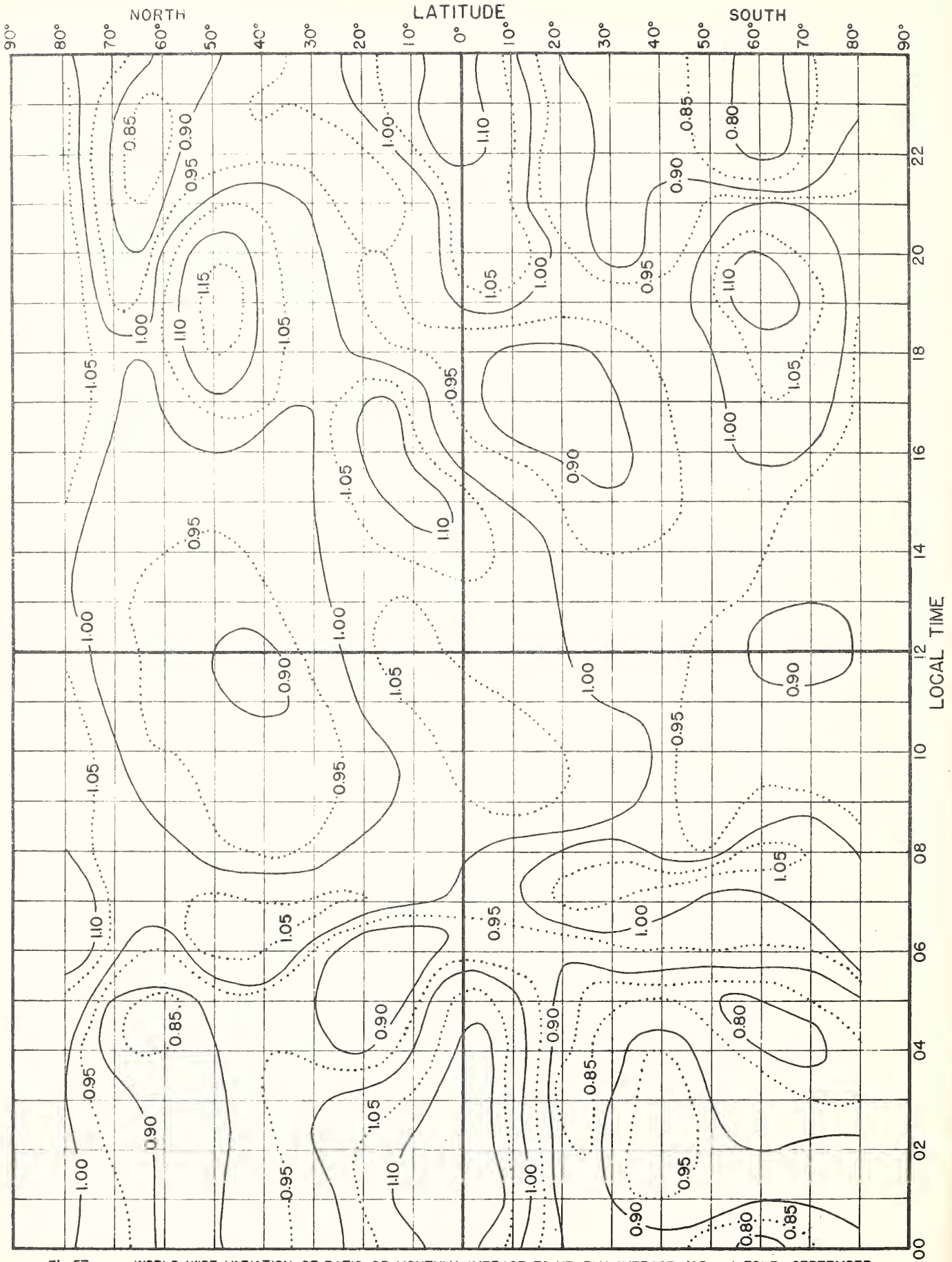

Fig. 57. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE $f^{\circ}F_2$, I ZONE, SEPTEMBER.

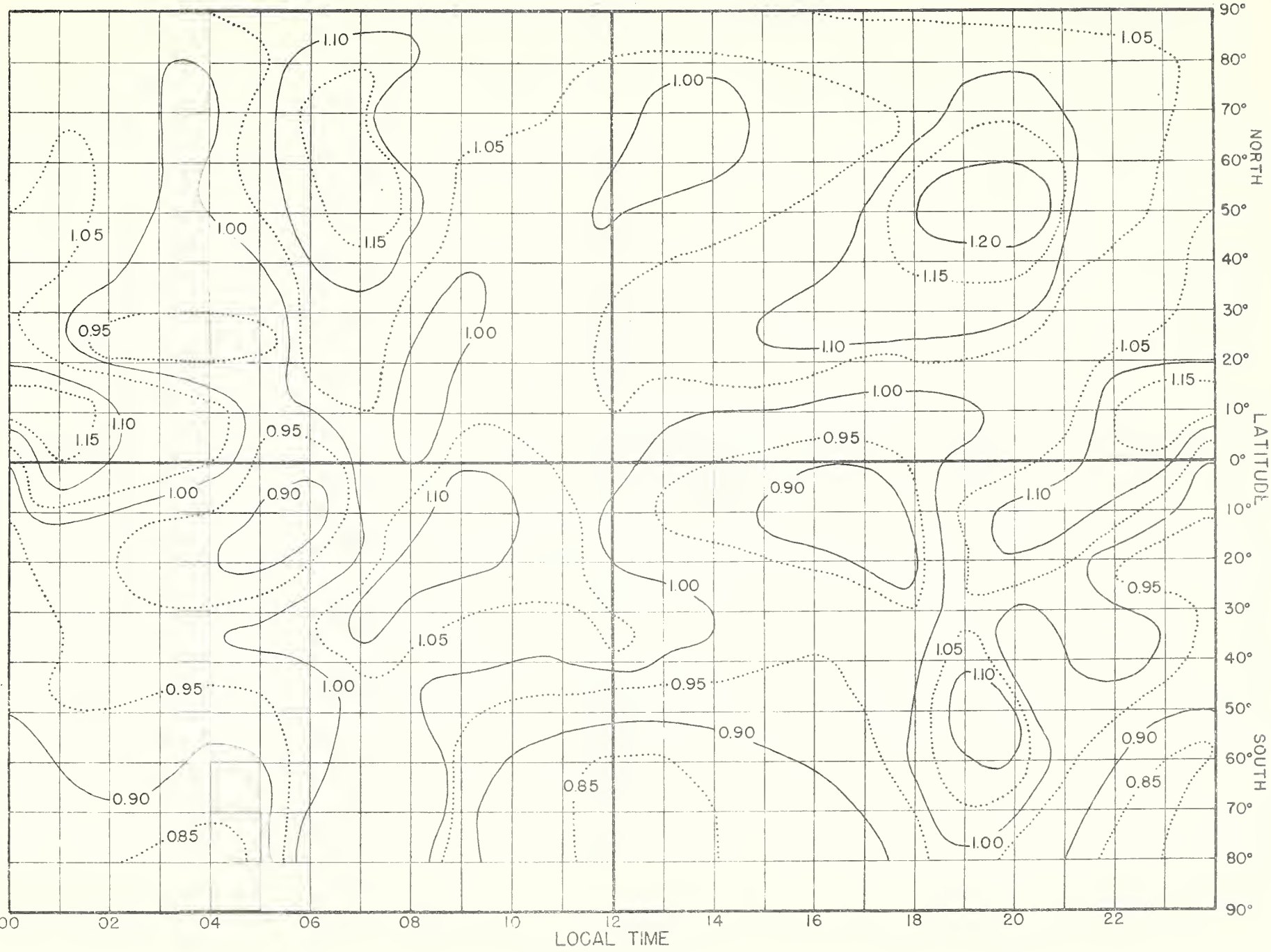

Fig. 58. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f^0F_2, E ZONE, SEPTEMBER

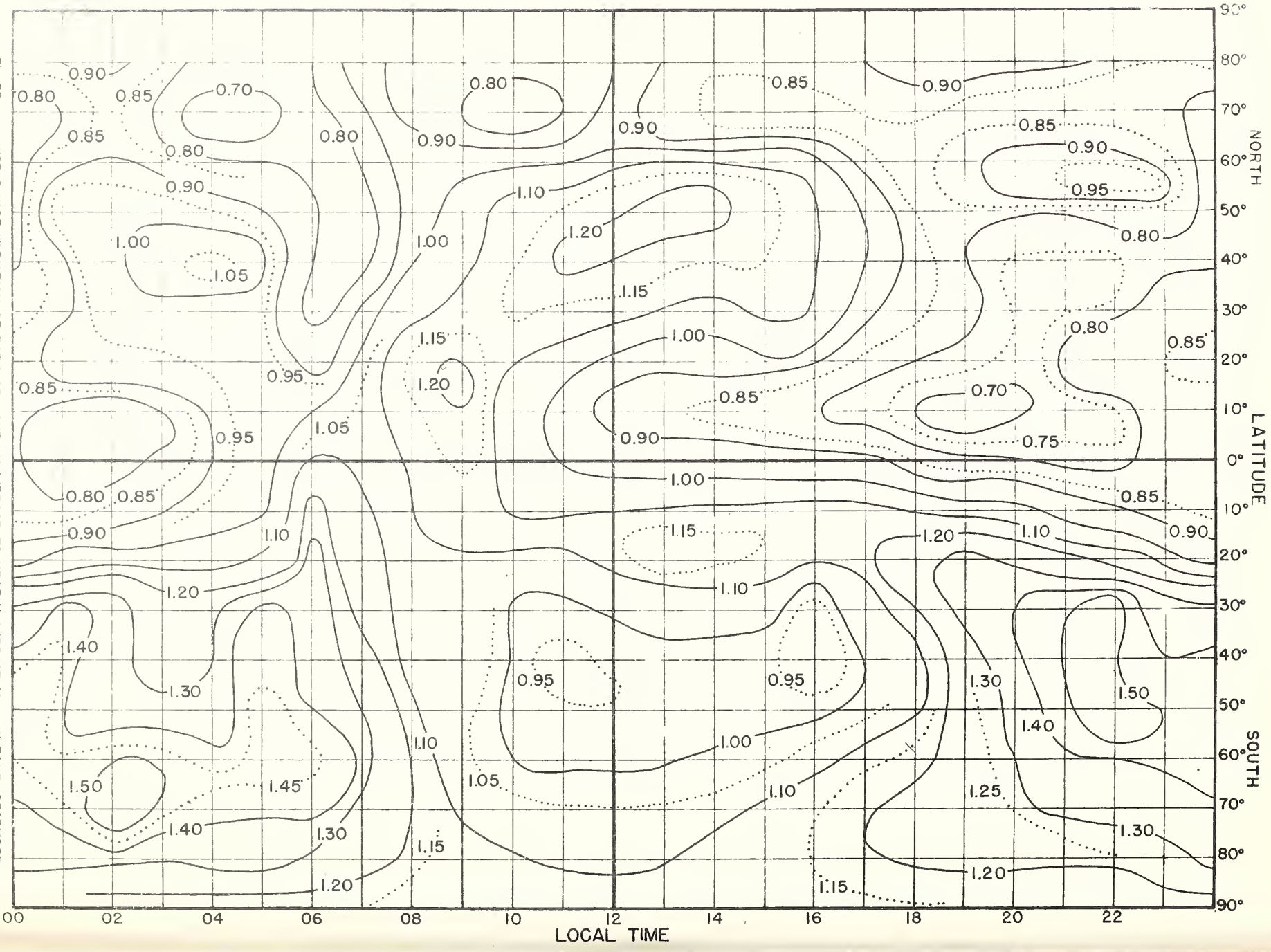

Fig. 59. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE f°F2, W ZONE, DECEMBER.

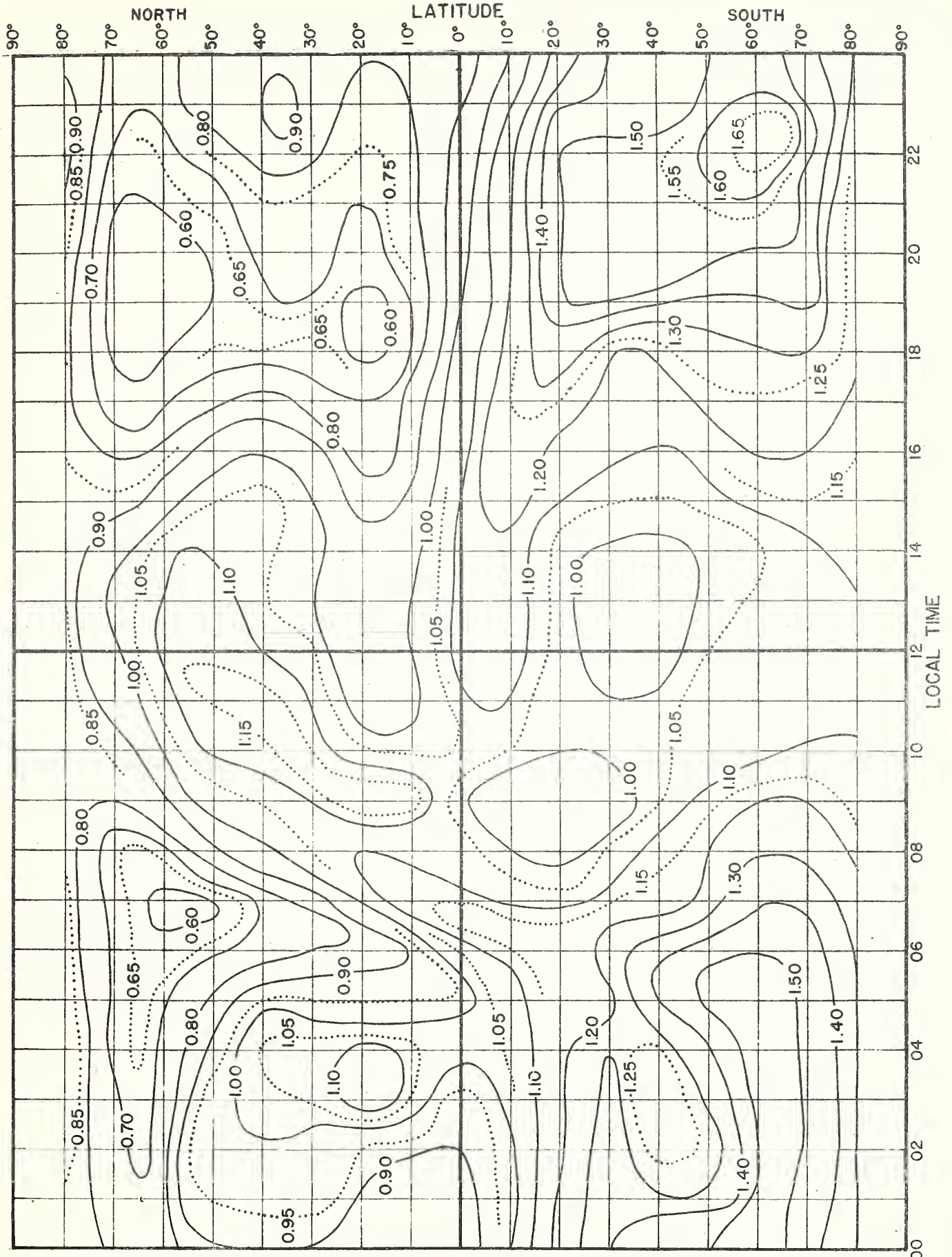

Fig. 60. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE $f^{\circ}F_2$, I ZONE, DECEMBER.

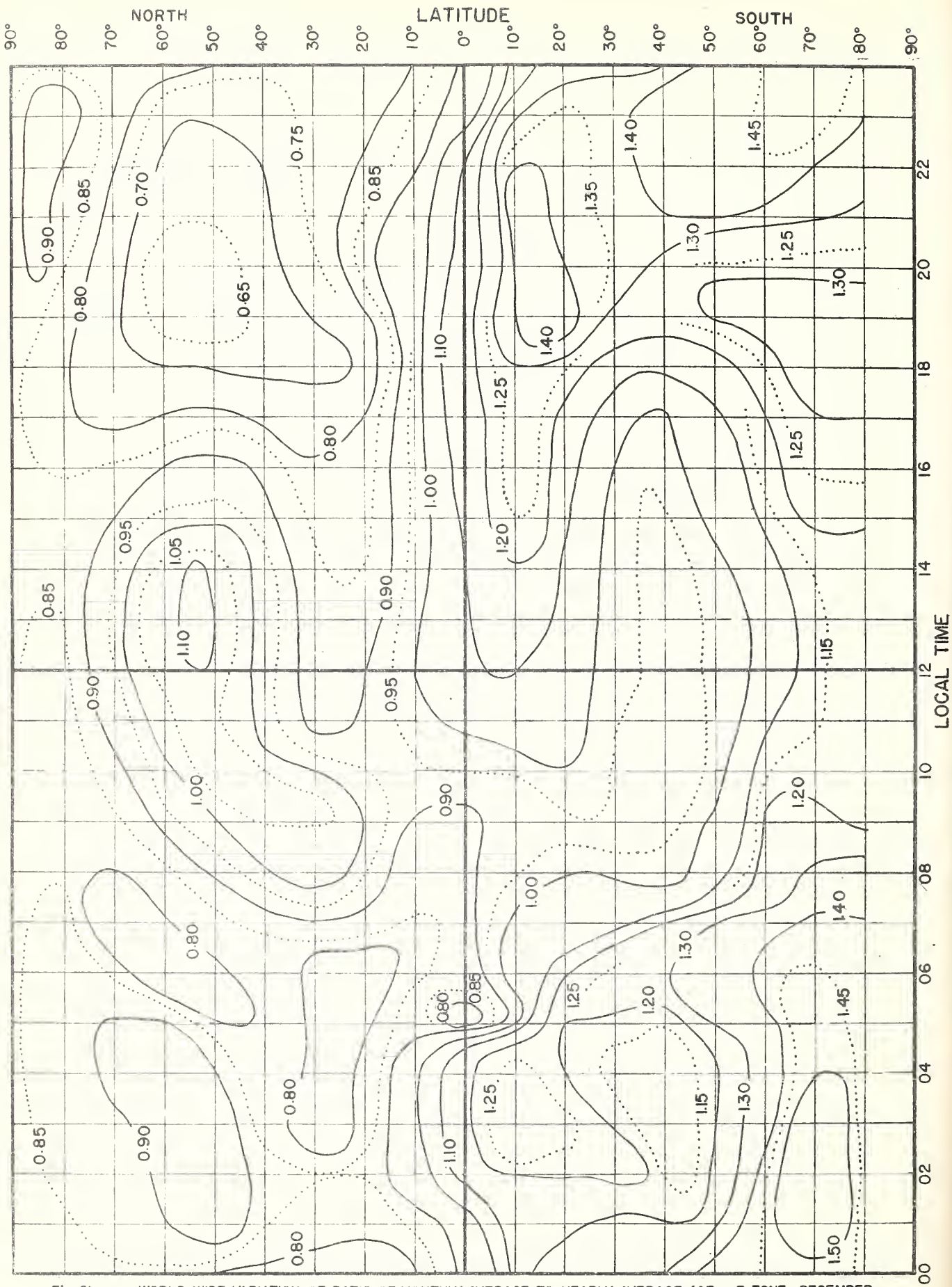

Fig. 61. WORLD-WIDE VARIATION OF RATIO OF MONTHLY-AVERAGE TO YEARLY-AVERAGE $f°F_2$, E ZONE, DECEMBER.

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